679.

The Northwestern Miller

ESTABLISHED 1873

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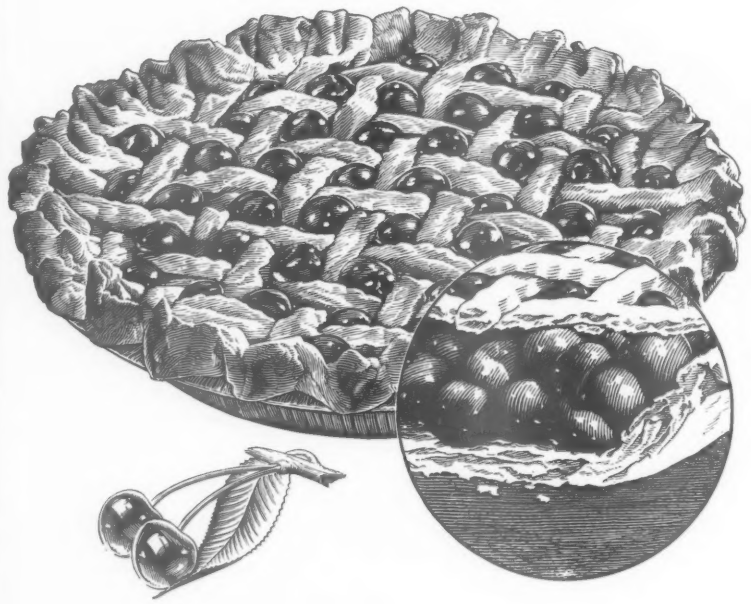

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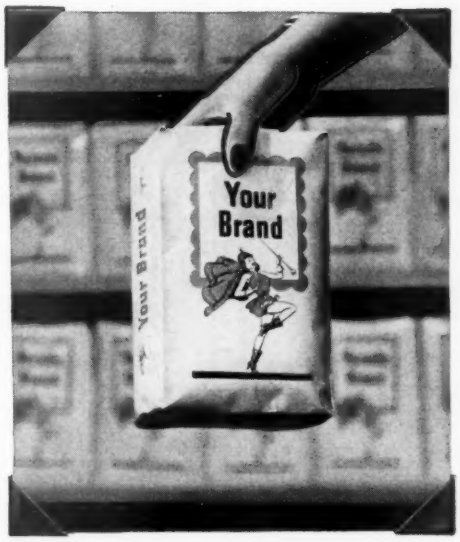

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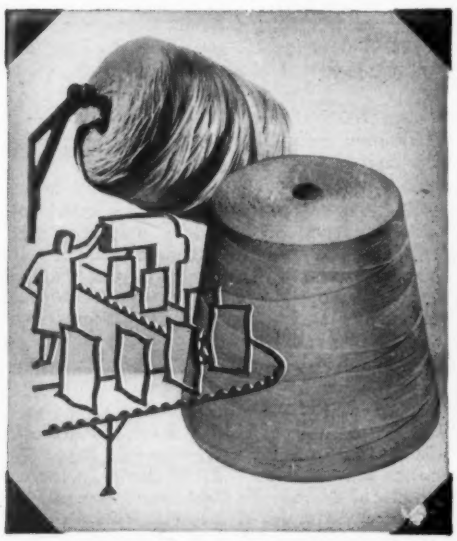

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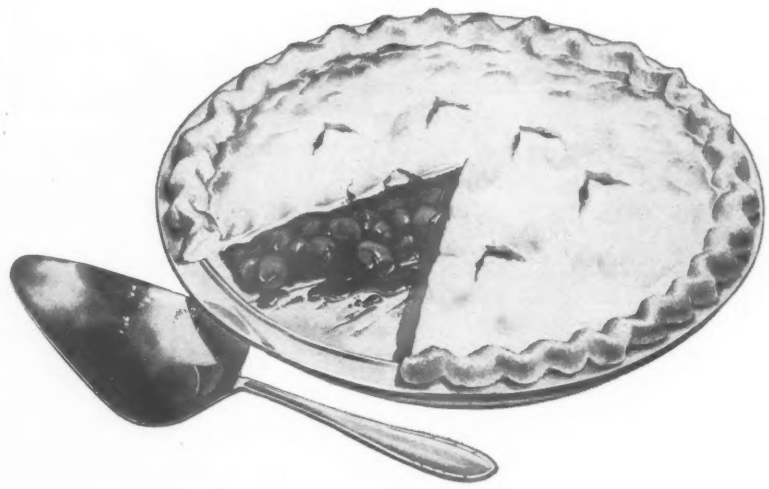

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Donations of Surplus Foods By USDA Increase 54%

WASHINGTON—Donations of surplus foods by the U.S. Department of Agriculture have been increased sharply over last year, with the July-through-March total up 54% over the same nine months of the previous fiscal year. A total of 2,156.8 million pounds of food was donated during this period to recipients in this country and abroad through the direct distribution program conducted by USDA's Agricultural Marketing Service.

Increases in donations over last year's figures were made in distribution both to recipients in this country and to those abroad, as USDA pushed its activities in making constructive use of surplus foods it has acquired under the price support program and purchased under surplus removal operations. Domestic distribution, totaling 868.9 million pounds, was increased 55% over last year. And foreign distribution, at a total of 1,287.9 million pounds, was increased 53% over the same period a year ago.

In this country, donations of surplus foods to schools for use in school lunch programs were increased most sharply of all categories. A total of 382.6 million pounds of food was put to use in this way, a 72% gain over use in schools a year ago. Donations to charitable institutions and to needy persons were each increased 44%. The institutional distribution totaled 115.2 million pounds, and distribution to needy persons amounted to 371.1 million pounds.

Large quantities of foods were donated, during the first three months of 1957, to the victims of natural disasters in this country during a period when floods and tornadoes took an unusually heavy toll. Available foods are rushed into emergency feeding operations in such disasters, from supplies already in distribution channels.

When floods swept through Kentucky and Virginia in January, all available foods were moved into use in the emergency feeding operations. Shipments had to be made into the area from nearby points, after the floods destroyed valley warehouses in which surplus foods had been stored. In Kentucky, 1 million pounds of food was distributed to over 120,000 persons, and in Virginia 350,000 lb. of food was distributed to 15,000 persons.

The following table shows some of the surplus foods donated, the quantities and their costs. Figures cover the 9 months from July, 1956, through January, 1957, with comparisons to the total for the previous complete fiscal year:

(in million pounds)

	Corn meal	Flour, wheat	Shortening†	Wh't
DOMESTIC				
Schools—				
Fiscal year 1956 ..	....	....	19.4	6.7
July-March FY-1957	15.9	40.6	.1	1.6
Institutions—				
Fiscal year 1956 ..	....	....	10.2	6.9
July-March FY-1957	6.5	36.1	*	6.4
Needy persons—				
Fiscal year 1956 ..	50.6	77.1	17.5	.3
July-March FY-1957	66.8	104.1	....	*
Total—				
Fiscal year 1956 ..	50.6	77.1	47.1	13.9
July-March FY-1957	89.2	180.8	.1	8.0
FOREIGN DISTRIBUTION				
Fiscal year 1956 ..	....	....	17.0	224.7
July-March FY-1957	213.9	370.0	....	55.2
TOTAL DISTRIBUTION				
Fiscal year 1956 ..	50.6	77.1	64.1	7.2
July-March FY-1957	303.1	550.8	.1	63.2

*Less than 50,000 lb.
†Includes cottonseed oil.

Foods donated under the direct distribution program are going in this country to about 12 million school children taking part in school lunch programs, and to 1.4 million persons in charitable institutions. In addition, 3.4 million needy persons in family units are currently receiving commodities.

A total of 39 states and Alaska and Puerto Rico are currently taking part in this distribution of surplus foods to needy persons, with 907 counties and 134 cities participating in those states. Puerto Rico started distribution to needy persons in January after termination of its hurricane emergency relief program. Louisiana re-entered the program in January, after having discontinued activity in May last year. Missouri re-entered the program after having been in it previously for one month, February, 1954. In February, South Carolina entered the program for the first time.

The number of agencies taking part in the foreign donations program increased to 23 during the January-March quarter year, and the number of the countries to which food is donated increased to 84. Food distribution outside the U.S. is made by voluntary U.S. agencies, with surplus foods donated to them after provision has been made for the needs of all eligible recipients in this country.

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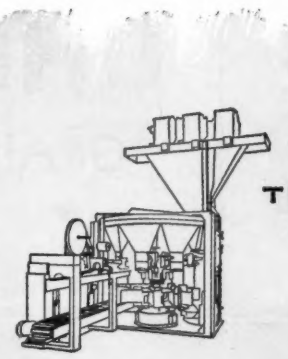
COST OF LIVING

WINNIPEG — The cost of living index in Canada went to 120.9 during March compared with 120.6 in February, and 116.6 a year ago.



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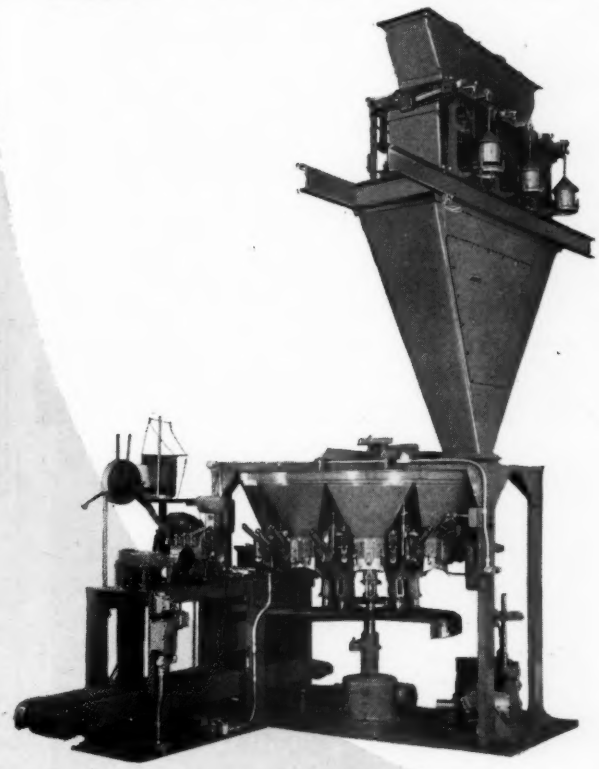

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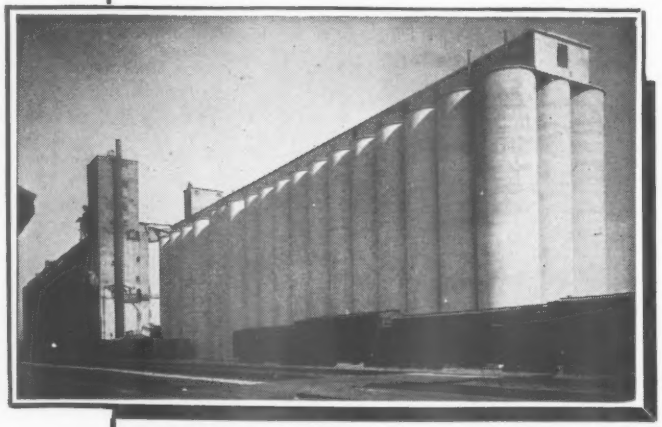

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RYE IMPORT QUOTAS TO BE STUDIED

WASHINGTON—At the request of the White House, the Tariff Commission has called hearings to consider the renewal of quotas on rye imports into the U.S. starting with the new crop year on July 1, 1957. This request is seen as an indication that under the provisions of farm legislation the U.S. Department of Agriculture finds it necessary to ask for quotas on rye. The expectation is that the quota will be the same as that now in operation, 3.3 million bushels, although the domestic supply situation indicates there might be a further relaxation of the controls.

Rain is Dominant Weather Factor In Southwest

KANSAS CITY—Rain continues to show up in weather reports from many parts of the winter wheat area, helping to build subsoil moisture and improve the over-all outlook for the wheat crop, but now also acting as a possible detriment to development of the crop in some places.

The wet weather has been a particular problem in Texas, eastern Oklahoma and eastern Kansas. The growth is too rank in some instances and lodging is a danger. Wheat is heading out in the southern counties of Kansas. A little speckled leaf blotch has shown up in the southeastern part of the state. In the western part of the state pale western cutworms have damaged the stand in some counties.

J. W. Whitacre, Commander-Larabee Milling Co., Kansas City, who recently returned from an extensive tour of Kansas wheat fields, reported practically no wheat except in irrigated lands in the western part of the state bounded by St. Francis and Norton on the north and Wilson, Stafford, Pratt and Medicine Lodge on the east. He indicated generally good conditions for the crop in the counties bordering east and north of this line and excellent prospects in the southeastern portions of the state.

Leaf rust has shown up in wheat fields of Oklahoma where dry weather and sunshine are needed. Losses could be heavy if the wet weather continues.

Texas wheat growing sections are expected to turn out the best crop in recent years, even though wind and driving rain have caused lodging, and rust has shown up in some areas. Part of the optimism has been generated by the outlook for the late germinating wheat.

The Nebraska prospects are quite good with moisture considerably better than a year ago. The crop is reported to have a lush growth with excellent color and a minimum of insects and disease for this time of year.

——BREAD IS THE STAFF OF LIFE——

BALTIMORE EXPORTS DIP

BALTIMORE—A total of 2,789,363 bu. wheat were exported from the Port of Baltimore in April, compared to 6,404,950 bu. in the corresponding month last year, according to the monthly report of the Baltimore Chamber of Commerce. A summary of other exports last month were: corn, 413,999 bu.; oats, 51,000 bu.; rye, 473,435 bu.; barley, 256,666 bu., and soybeans, 270,161 bu.

USDA Report Shows "Substantial" Improvement in Winter Wheat Crop

By JOHN CIPPERLY
Northwestern Miller Washington Correspondent

WASHINGTON — A substantial improvement in the winter wheat crop is reflected in the U.S. Department of Agriculture May 1 crop report — approximately 703 million bushels. The possibility that even further gains may be in the making at the time of subsequent reports, plus the outlook for the spring wheat crop, now indicates that the crop this year may equal that of a year earlier and about balance out the heavy export program of this current crop year. This program, it had been hoped, would cut down the heavy Commodity Credit Corp. surplus of this grain.

The crop of 703 million bushels would be about 5% smaller than the 1956 crop of 735 million bushels, nearly a fifth less than average but 5% above a month ago. Increases from April 1 prospects were rather general throughout the country with significant increases in Texas, Colorado, Kansas and Nebraska, the USDA reported.

The indicated yield at 22.5 bu. per acre for harvest is the highest of record and compares with 20.6 bu. in 1956 and the average of 18.6 bu. The indicated record yield may be reached with only New York, New Jersey, Indiana, Maryland and West Virginia exceeding their current record yield. This indicates a quite uniform satisfactory development of the crop over a majority of the producing areas.

The estimated 31.2 million acres of winter wheat remaining for harvest on May 1 represents a decrease of 12% from the 1956 harvested acreage, is a third less than average and is the smallest acreage since 1933.

The heavier outturn of wheat for this new crop is traced primarily to larger-than-usual yields per acre, which in turn reflects improvement in moisture conditions in sections of the winter wheat belt.

Not only has the break in the southwestern drouth been a large factor, but the higher yields are seen by USDA observers as a result of soil bank operations. The general effectiveness of the soil bank as a crop reducing instrument has long since been rejected by top agricultural economists and the condition of the winter wheat crop confirms their previous judgment.

Effect of Soil Bank

The soil bank has kept into production the best of Wheat Belt land, as the farmer took out marginal or fringe acreage to get his soil bank bounty and concentrate on top yields from the better land. In this goal the wheat farmer in the Southwest has been aided by the sudden break in the drouth.

A qualifying factor in the likelihood of a crop equal to last year from an estimated 31.2 million acres for harvest is the history of probable reduction in the final outturn from the amount forecast in the May 1 report. In the past 10 years there have been large swings between the May 1 report and the final estimates, USDA states. Such swings have been as high as 163 million bushels in 1949 to a low level of over-estimate in 1951, when the USDA was on the high side in May by approximately 31 million bushels.

It may be seen that although there has been a broad improvement in moisture in the dust bowl area it will still be necessary for the crop to get favorable weather conditions from now until harvest if the May estimate is to be sustained.

Notwithstanding any speculative guesses as to the size of the crop, it seems manifest that the crop will be large and that even the big ex-

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The Northwestern Miller MAY 14, 1957

EXPORT PROMOTION—The Japanese lettering means "U.S. Flour for Export." The Millers National Federation, the Oregon Wheat Growers League and the Nebraska Wheat Commission are all engaged in the promotion of flour and wheat sales abroad using funds provided under the aegis of Public Law 480 ..... **Page 10**

FUMIGANTS—Dr. Lyman Henderson, U.S. Department of Agriculture, presented a paper on the comparison of three mill spot fumigants for the control of mill insects at the technical conference of the Association of Operative Millers. The paper was prepared by three of his associates ..... **Section Page 1a**

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MILLERS NATIONAL FEDERATION

55th Annual Convention

Wednesday, May 15
2:00 p.m.—Meeting of Board of Directors, Millers National Federation.

Thursday, May 16
9:30 a.m.—Meeting of Board of Directors, Millers National Federation.
2:00 p.m.—Presidential address—G. S. Kennedy.
"Three-Year Changes in Mills and Milling Capacity"—Herman Steen.
"Competition and Pricing Methods in Basic Industries, with special reference to flour milling"—Dr. R. B. Heflebower, Northwestern University. Discussion.
6:45 p.m.—Annual dinner, cocktails at 6:00.
"The State of the Union" — Hon. Thruston B. Morton, United States Senator from Kentucky.

Friday, May 17
9:30 a.m.—"Probable Effect of Declining Storage Revenue Upon Mill Earnings"—Mark W. K. Heffelfinger.
"Modern Nutrition in Human Health, with particular reference to cereals and grains"—Dr. Fredrick J. Stare, Harvard University.
"What's Your IQ—In Basic Product Promotion?"—A presentation by members of the Wheat Flour Institute Committee.
12 Noon—Annual Luncheon—Young Millers.
2:00 p.m.—Closed session, for millers only, for discussion of any pertinent subject which members may wish to bring up.
Social hour and cocktail party.

——BREAD IS THE STAFF OF LIFE——

North Dakota Mill To Build Elevator, Bulk Flour Tanks

GRAND FORKS, N.D.—The North Dakota State Mill and Elevator here expects to advertise about May 23 for bids for construction of a new grain elevator, according to P. L. Fossen, general manager.

Mr. Fossen said the mill is now in the process of getting designs and engineering specifications for the building. He said the elevator will have a capacity of 42,500 bu. and will contain about 25 bins to permit better separation of grains. It will be constructed alongside Local Elevator No. 2 on the mill grounds.

Installation of bulk flour storage tanks at the mill is also contemplated, Mr. Fossen said, but this project is still in the preliminary stages. Installation of four bulk tanks is contemplated.

The improvements to the mill will cost in the neighborhood of $585,000, and they have been given preliminary approval by the state industrial commission. Mr. Fossen said the new elevator will cost about $85,000 and the bulk tanks $500,000.

Aggressive Flour Sales, Promotional Work Build Better, Bigger Markets

By George E. Swarbreck
Managing Editor, The Northwestern Miller

The building of bigger and better markets for flour in overseas countries occupies the attention of many U.S. milling firms. Their domestic trade is invariably of paramount importance, but executives know that exports must be kept moving if all the available capacity at their command is to be utilized efficiently and economically. Conscious of this need, the export departments and their representatives overseas made determined efforts to make 1956 a boom year. They succeeded. Because of their aggressive selling methods, the U.S. millers moved more flour abroad last year than in any year since 1949.

Aiding business promotionally in some areas was the Millers National Federation through its export program department.

The business did not make itself; the orders had to be sought after and that meant some hard selling. Even flour going out under aid programs has to be sold to the government.

Selling conditions are tougher today than they were in those lush postwar years. Then there was an almost world-wide demand for American agricultural products. Foreign flour mills had been damaged while the home production of food was down to dangerously low levels in many countries. The competition from Canada and Australia was ever-present but caused no real difficulties when compared with the severity of that competition today. And now other countries are in the export business, countries such as Germany, Austria, France, the Netherlands and Italy. Even the Russians have come into the picture with shipments to Iceland and offerings elsewhere.

So the task of selling flour abroad is no light one. Yet salesmanship is helping to fill the order books.

Flour the Spearhead

In the promotional picture, too, are the wheat growers with those from Nebraska and Oregon in the van of progress. The wheat growers and the flour millers are helping each other break into new markets. Flour, in fact, spearheads the market for wheat, for once imported flour circulates in a country, the domestic millers have to buy better grade wheat to compete. That is a maxim in the international trade.

It is in the opening up of new markets, the building up of a new demand where little or no demand existed before, that these programs are beginning to pay dividends.

Aiding all this activity is the cooperation of the U.S. government in providing foreign currencies earned under Public Law 480 deals. Contractual arrangements have been entered into with Millers National Federation, the Oregon Wheat Growers League and the Nebraska Wheat Commission, in association with the State of Nebraska's division of wheat development.

Gordon Boals, director of the federation's export program, has helped blaze the trail into some of these new markets. The consumption of wheaten products in many countries is dismally low, he reports. Yet people are becoming more and more bread conscious and once having tasted the products of American mills, they demand that their bakers provide more.

Promotional operations are expanding. Mr. Boals has reported on the acceptance of bread products in Colombia; the Oregon growers have had a major success in Japan while the Nebraska group is selling hard to Italy and Greece. Though the accent is on wheat in these last three countries, it follows that the flour trade could benefit, too. Other states are working on promotional schemes to aid their growers and processors.

Potential Markets

There could be lush markets for the wheat and flour producers in South Korea, Indonesia, India, Pakistan, Burma and in the South American countries. The potential is there, traders firmly believe.

Many eastern peoples are being schooled to the acceptance of wheat products instead of the traditional rice. The ever-present danger of a rice crop failure, particularly in the exporting countries of Burma and Thailand, makes it essential that alternative food supplies are acceptable. During the war, when both countries were overrun by the Japanese, would-be consumers of rice had to use wheat and the product found considerable acceptability.

The government's PL 480 promotional funds are handled by a U.S. group, such as MNF in Colombia, in association with local trade bodies. None of the promotional work is imposed by the U.S. Department of Agriculture. The local traders must also help willingly. Wherever needed, arrangements can be made for the development of associations and institutes to take advantage of all promotional possibilities. Mr. Boals helped form a bakers' group in Colombia.

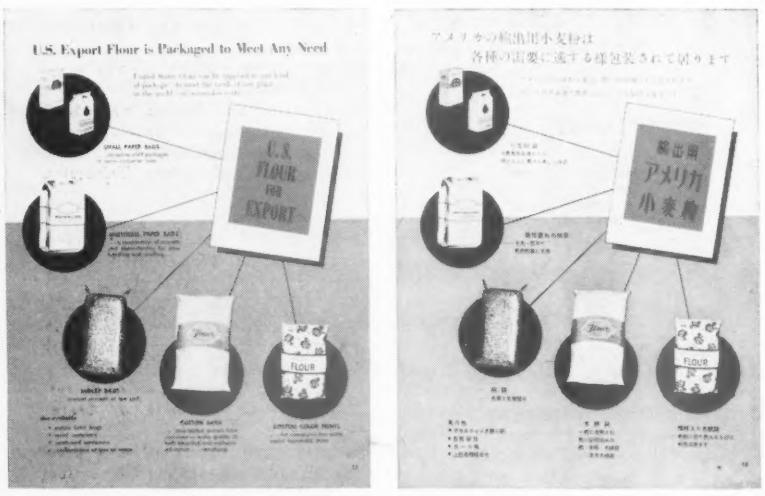
The U.S. government is participating in trade fairs all over the world and agricultural products occupy a prominent position. Mr. Boals has reported on his experiences in Bogota, Colombia. In 1955, some samples of bread were given away; they found a ready acceptance in a country where bread consumption is low and quality poor. The exhibits provided a shop window for the people to see for themselves the high standard of living in a democratic country. To the Colombians, the bread was the epitome of that standard.

Stampede for Bread

It was decided to repeat the experiment in 1956, but for the first 8 days

U.S. BREAD—A major attraction at the trade fair in Bogota, Colombia, was the distribution of samples of U.S. flour products. Nearly 600,000 people visited the booth in the final eight days of the fair. The authorities insisted on an outside location because of the pressure of the crowds anxious to obtain products made from U.S. flour.

BREAD LINE—These two Colombian models volunteered to act as bread distributors at the American exhibit because, they said, the booth was the liveliest at the fair and they wanted to be seen.



JAPANESE PROMOTION—Pictured at left is a page from the pamphlet, U.S. Flour for Export, published by the Flour Millers Export Assn. and distributed by the Millers National Federation. At right is the Japanese translation, printed in Japan at the instigation of the Oregon Wheat Growers League. The pamphlet is being used as a promotional piece in several countries and more translations into other languages are planned.

Oregon League Builds Business for Flour Products in Japan

Nowhere in the recent history of the world has the switch to wheaten products been more remarkable than in Japan. Responsible for much of the promotional activity has been the Oregon Wheat Growers League in cooperation with the U.S. Department of Agriculture and local trade associations.

In 1949 Japanese bread output was assessed at 262,100 metric tons in terms of wheat flour. By 1955 the figure had more than tripled to 794,800 tons. There was a small setback to 760,800 tons in 1956, due to the abundance of rice, the product of two good crops. Price-wise, rice became an attractive proposition, particularly to the older people. The main consumption area of wheaten products is in the younger age groups, and they remained loyal to the new food.

Promotional work is continuing unabated in Japan. Last month the Japanese Federation of Bakers Cooperative Assn. and the Federation of Housewives Organization held a National Bread Festival, using the slogan "Eat Bread at Least Once a Day."

Right now, the Japanese are seeing an exhibition of U.S. food products in the agricultural pavilion at the International Trade Fair which opened in Tokyo on May 4. The fair will run to

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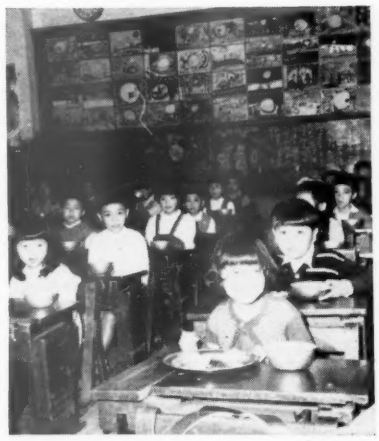

SCHOOL LUNCH — The Japanese school lunch program provides a bread roll for each child. Illustrated is a typical schoolroom scene during the midday break.

no U.S.-type flour products were available. The attendance was 327,763. On the ninth day the news got around that the Americans had brought their bread. It was a stampede. In the remaining eight days of the fair no less than 679,547 people attended the exhibition. Bread samples distributed numbered 400,000, pasta products 150,000. The bread was made up as rolls or variety types.

This is the type of promotion that is impressing people with the goodness of flour products. The bakers report an immediate demand for better quality. American flour is giving them just that.

The Colombian promotion is but one small facet of the work done in Mr. Boals' department, but it is indicative of the value of such schemes as orders for flour begin to come in from Colombia.

There has been widespread criticism of the so-called "give-away" policies practiced by the U.S. Much of that criticism has come from the exporting millers of Canada and Australia. Yet it is apparent that they, too, stand to benefit as the promotional work for flour begins to pay off in bigger orders. Perhaps PL 480 and its work in providing promotional funds may build-up new markets for all flour exporters. That is the belief of many people associated with the U.S. trade.

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Nebraskan Promotion Aims for Italian, Greek Trade

Action in Nebraska to promote the sale of wheat and wheat products not only abroad but on domestic markets, also, is typical of what is being done or will be done by other states.

In recent years, Nebraskan farmers became alarmed by the problems facing the state's number one cash crop—wheat. They determined to do something about it.

Through the efforts of the Nebraska Wheat Growers Assn. and the support of many other groups in the wheat industry, interest was aroused and a decision made to establish a grower-supported wheat program. The result was the Nebraska Wheat Resources Act which went into effect on Sept. 18, 1955. It provides for a tax of one-fourth cent a bushel upon all wheat grown in Nebraska and sold through commercial channels. The tax is imposed on the grower and collected by the first purchaser. Also established was the Division of Wheat Development, Utilization and Marketing, an agency of state government under the state agricultural department. Then the Nebraska Wheat Commission was formed consisting of seven growers appointed by the governor to formulate policies and direct how funds were to be utilized. Chairman is Carson R. Smith of Ogallala. Chief of the wheat development division is Leslie Sheffield.

The work done in the domestic field has been valuable; in the foreign field the Nebraska organization is pursuing an energetic course.

Greek and Italian Markets

The countries selected for promotional work were Greece and Italy. The wheat development division and the commission worked out a cooperative development program utilizing, in part, the facilities provided under PL 480.

Under this program, an Italian wheat delegation consisting of seven key government and wheat industry officials was provided with an extensive 10-day tour of wheat producing, marketing and processing facilities in Nebraska during October of last year. Also inspected were wheat facilities in Kansas and Oklahoma.

Italy needs wheat to blend with the limited supplies of durum available. The delegation was told that hard red winter wheat is of high quality and can be successfully blended with durum for the use of the spaghetti and macaroni manufacturers.

A Greek delegation recently visited the state. The emphasis in this case was on how hard red winter wheat can be successfully blended with Greek supplies of soft wheat in bread production.

Another project adopted in Nebraska involves a study of the transportation costs for wheat and wheat products to determine the effect on both domestic and foreign markets. More projects of an investigative nature are being formulated. Studies are being made to insure the continued good quality of Nebraskan wheat, a major selling point as new markets open up in the export field.

U.S. EXPORT BIDS REJECTED

NEW YORK—The United Nations International Children's Emergency Fund has indicated that bids submitted by U.S. mills to supply a considerable amount of export business with the Middle East have been rejected. The report said that the business was reportedly obtained by European mills.

NEBRASKAN TOUR—Last fall a group of Italian wheat industry officials visited Nebraska at the invitation of the Nebraska Wheat Commission and the state's Division of Wheat Development, Utilization and Marketing. The Italian group is seen inspecting a bakery.

DEMONSTRATION—A group of Japanese women pays rapt attention to a demonstration of preparing flour products. Eight of these mobile units have been provided under arrangements with the Oregon Wheat Growers League.

Brazil, Austria, Finland Get Wheat Purchase Agreements

WASHINGTON — Agreements and provisions for the purchase of U.S. wheat and wheat flour by Brazil, Austria and Finland have received approval, the U.S. Department of Agriculture has announced.

USDA has announced the issuance of an authorization to Brazil to finance purchase of $10,111,000 worth (including certain ocean transportation costs) of wheat or wheat flour from U.S. suppliers under Title I of Public Law 480. The authorization was issued under an agreement with Brazil announced on Dec. 31, 1956.

Authorization No. 28-10 provides for purchase of approximately 140,000 metric tons of wheat, in bulk, grade U.S. No. 2 or better, or wheat flour.

Classes Defined

The following classes or subclasses of wheat will not be financed under this authorization: (a) Durum wheat and flour milled from durum wheat (durum wheat includes the subclasses hard amber durum, amber durum and durum); (b) Western white wheat or soft white wheat and flour milled from these two subclasses for shipment from any Pacific Coast port.

Sales contracts between suppliers and importers made on or after May 17, 1957, and on or before June 29, 1957, will be eligible for financing. Delivery will be to importer c. & f. or c.i.f. Brazilian ports, or f.o.b. or f.a.s. vessel, U.S. ports. Shipments from U.S. ports may be made on or after May 17, 1957, but not later than September 29, 1957.

Purchases of the wheat or wheat flour under this authorization will be made by Comissao Consultiva de Trigo, Ministerio da Agricultura, Rio de Janeiro.

Austria

The signing of an agreement between the U.S. and Austria provides for financing the sale of $14.7 million worth (including certain ocean transportation costs) of U.S. surplus agricultural commodities. The agreement was negotiated under Title I of Public Law 480. Payment for the commodities will be in schillings (Austrian currency).

The commodity composition of the agreement includes feedgrains (approximately 70,000 metric tons) valued at $4.1 million and wheat (approximately 40,000 metric tons) valued at $2.5 million.

Sales under this program will be made by private U.S. traders. Details of the purchase authorizations will be contained in separate announcements.

This represents the third Title I, Public Law 480 agreement entered into with Austria. Previous agreements were announced June 16, 1955, and Feb. 7, 1956. They provided for financing purchase of $28.3 million worth of various agricultural commodities.

Finland

The agreement with Finland provides for financing sale of $3,655,000 worth (including certain ocean transportation costs) of various agricultural commodities. The agreement was also negotiated under Title I of Public Law 480. Payment for the commodities will be in finnmarks (Finnish currency).

The agreement includes the sale of wheat (approximately 22,000 metric tons) valued at $1.43 million.

AOM Highlights Modernization Need For North American Flour Mills

By GEORGE E. SWARBRECK
Managing Editor, The Northwestern Miller

BUFFALO — The main talking point at the recent 61st annual technical conference of the Association of Operative Millers in Buffalo centered around the modernization and rehabilitation of the flour milling industry. Numerous papers dealing with new equipment and new ways of doing things were presented to the members and discussions ranged over a wide field both in and out of the meeting room.

Many American and Canadian firms are already well ahead with their reconstruction programs, the operative millers were told. AOM has done much to spark interest in the ways and means to build better, more efficient, more economic plants.

The equipment is available; machinery manufacturers were present in force to demonstrate their wares. The all-important facet of financing was not forgotten and the millers were appreciative of the challenging speech delivered by Charles Ritz, chairman of the board, International Milling Co. They applauded, too, the ideas expressed by Gerald S. Kennedy, vice president, General Mills, Inc., president of the Millers National Federation. (The Northwestern Miller, May 7, page 11.)

Chief interest lay in a modernization panel made up of technicians who have had experience in new mill construction or rebuilding in the recent past.

The panel was made up of:

T. C. Mills, Ogilvie Flour Mills Co., Ltd., Montreal, Que.; J. George Kehr, Russell-Miller Milling Co., Minneapolis, Minn.; Charles P. Dowd, Robin Hood Flour Mills, Ltd., Minneapolis, Minn.; G. A. Hunt, General Mills, Inc., Kansas City, Mo.; Emmett Loy, Loy's Mill, Brookville, Ohio; L. C. Robinson, Colorado Milling & Elev. Co., Denver, Colo.; Garland King, The Kansas Milling Co., Wichita, Kansas; Creighton Morrison, Lindsey-Robinson & Co., Inc., Roanoke, Va.; George J. Tesarek, The Quaker Oats Co., St. Joseph, Mo., and Harry L. Donovan, Anaconda Industrial & Agricola de Cerais, Sao Paulo, Brazil.

The moderator was Jack W. Perkins, General Mills, Inc., Buffalo.

The program got away to a good start as Mr. Dowd defined modernization and differentiated between modernizing through the construction of a completely new mill and the remodeling of present facilities — the latter seen as the most important facet of modernization work in North America today. Mr. Dowd cautioned that in dealing with modernization, discussion should not be confined to the actual milling process. There were many other departments crying out for attention and since no two mills were alike, each firm sees its requirements on differing priority bases.

Mr. Mills detailed methods of convincing management that capital expenditure in a mill is justified. He stressed that it was no longer feasible to consider paying off the investment in a period as long as 10 years, as in the past. Today management insists that the cost must be covered in periods of no more than four years. This means, Mr. Mills said, that the cost must be covered by annual savings in four instalments.

The panel discussion then gave consideration to the economy of rebuilding old roller mills and purifiers as a means of cutting down capital expenditure. Members of the panel related their experiences. The need to rebuild old machines was often urged upon the technician by management eager to slice the estimated cost of a rehabilitation project, the meeting was told.

Rebuilt Roller Mills

In one instance, roller mills were rebuilt in a milling firm's own machine shops for about $1,500 each. To farm out the work, however, would add another $500 to the bill.

A purifier costs around $1,500 to rebuild. The discussions revolved around the economics of rebuilding operations. Some members, in later after-session discussions, expressed disappointment at the accent placed on rebuilding. They felt that the panel could have been more aptly called an "overdue maintenance panel" or even a "used machinery discussion."

There was some admittance among those who had experience in rebuilding machines that they would not do it again, because of the grief occasioned.

The rebuilt roller mill, it was pointed out, may be anything from 40 to 50 years old. One member said: "It was a junk machine to start with, and $2,000 later it is still a junk machine. A rebuilt job cannot work efficiently another 40 or 50 years. What other industry," it was asked, "expects to get nearly a century of service out of one machine?"

A new roller mill, probably working automatically and requiring little labor attention, costs anything from $5,000 to $6,000. Set against that figure the cost of rebuilding the old machine, the loss through breakdowns, and the extra labor cost in-

(Continued on page 25)

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Sanitation, Modernization, Balance of Flour Mills Take AOM Attention

BUFFALO—Sanitation, mill modernization and a description of the factors involving the balance of flour mills occupied the attention of the members of the Association of Operative Millers who attended the 61st annual technical conference at Buffalo. The three talks are summarized in the following article.

Sanitation Concepts

Paul S. McSpadden, Commander-Larabee Milling Co., Minneapolis, and a member of the sanitation committee of AOM, spoke on "Current Concepts of Mill Sanitation." Mentioning that milling sanitation has developed considerably in the past 10 or 12 years, Mr. McSpadden said that "much is being done and planned to rehabilitate our old plants with new equipment. It is high time we think in terms of modernization of our sanitation program."

Mr. McSpadden pointed out that the milling industry has reduced its insect population in its plants to a minimum, holding it there by spot fumigation, plus a general fumigation once or twice a year if necessary. He also said that the rodent control program is "satisfactory," with an occasional influx of mice or rats which the mills work immediately to eliminate.

The speaker pointed out that these cares, plus the precautions for the care of grain and care in procuring grain, enable the mills to operate in a far more sanitary manner than was believed possible a few years ago, but the milling industry is paying a "proverbial pot full of money" for this sanitation procedure. He echoed the thinking of the sanitation committee with this idea: "How can we do a better job and do it cheaper?"

Mr. McSpadden felt that one of the first things necessary is to dispel the idea that sweeping in a mill is a menial job. "You are not paying for a menial job at present-day rates," he said.

"It is a characteristic of our people to resent a job of cleaning up after someone else, our job is to elevate this cleaning from a lowly job to one which the sanitarian will take pride in."

The name of sweeper should be done away with, he said. The word itself seems to imply a dirty job and sweeping is only a small part of the

(Continued on page 25)

COMMANDER-LARABEE RECEIVES AWARD

WASHINGTON—Commander-Larabee Milling Co., Minneapolis, was the successful bidder May 9 on a request to supply the U.S. Department of Agriculture with 5,731,000 lb. enriched and bleached flour for export to Peru under an International Cooperation Administration program. Commander-Larabee will receive 124,134 bu. U.S. No. 2 or better hard wheat in exchange for the flour which will be milled at St. Joseph, Mo., and Hutchinson, Kansas.

Flour Mills Reports Third Quarter Loss

KANSAS CITY—The third quarter report of Flour Mills of America, Inc., Kansas City, announced last week for the period ended Feb. 28, shows net loss for nine months of $2,472, compared with a profit of $373,755 in the like period a year earlier.

The losses were attributed primarily to deficits incurred in mixed feed operations and warehousing branches of the Bewley Mills Division and to a lesser extent to highly competitive flour pricing affecting the Flour Mills Division. Exclusive of the Bewley operations, the nine month net was $351,342, off slightly from a year earlier. Third quarter losses of the Bewley Division were reported as $250,514 and Flour Mills Division $180,924.

Operating economies have been instituted which will result in substantial savings, it was announced. Six of seven branch warehouses operated by the Bewley Division have been closed at Dallas, San Antonio, Waco, Houston, Corpus Christi and Tyler.

——BREAD IS THE STAFF OF LIFE——

William Grant Named To Head U.K. Firm's Flour Purchasing

LONDON — William Grant, manager of the flour and allied departments of the Scottish Cooperative Wholesale Society, Ltd., has been appointed flour advisor to Allied Bakeries, Ltd., the largest chain bakery in the U.K.

Mr. Grant succeeds Sir Norman Vernon who has been reputed to be the "largest single buyer of flour in the world." Sir Norman's policy was to buy from the British mills and from Canadian and American mills. Allied Bakeries is part of the group controlled by Canadian-born Garfield Weston.

Mr. Grant is well known in the Canadian and U.S. trades from visits he has paid to the North American continent.

MODERNIZATION PANEL—Pictured are the operative millers who made up the modernization panel at the 61st annual technical conference of the Association of Operative Millers. Left to right, George A. Hunt, General Mills, Inc., Kansas City; George J. Tesarek, Quaker Oats Co., St. Joseph, Mo.; Garland King, Kansas Milling Co., Wichita; Harry L. Donovan, Anaconda, Sao Paulo, Brazil; Creighton Morrison, Lindsey Robinson & Co., Inc., Roanoke, Va.; L. C. Robinson, Colorado Milling & Elevator Co., Denver, Colo.; J. George Kehr, Russell-Miller Milling Co., Minneapolis; T. Chris Mills, Ogilvie Flour Mills Co., Ltd., Montreal; Charles P. Dowd, Robin Hood Flour Mills, Ltd., Minneapolis, and Emmett Loy, Loy's Mill, Brookville, Ohio. Standing at right is Jack W. Perkins, GMI, Buffalo, moderator. Modernization was the dominant theme of the conference.

George L. Gates

Roger Berglund

HEAD FEEDSTUFFS EDITORIAL STAFF — George L. Gates has been named editor of Feedstuffs, it was announced last week by C. K. Michener, editor of The Northwestern Miller and chairman of the board of The Miller Publishing Company, Minneapolis, publisher of five business papers. Mr. Gates assumes the editorial position held by the late Harvey E. Yantis, who served as editor of Feedstuffs from 1933 until his death April 12. Roger Berglund has been promoted to managing editor. Mr. Gates has had extensive editorial experience and has been a Feedstuffs staff member for more than 10 years. He became managing editor in 1956. Mr. Berglund joined the staff in 1949 after newspaper and wire service experience; last year he was named assistant managing editor.

Soft Wheat Millers Elect H. L. Attkisson as Head

ROANOKE, VA.—Soft wheat millers from Michigan to Alabama met here last week for the annual spring meeting of the National Soft Wheat Millers Assn. and elected new officers, planned promotion programs and viewed the future with optimism.

Howard L. Attkisson, manager of the Ashland (Va.) Roller Mills, was elected president of the association, succeeding J. E. Skidmore, chairman of J. Allen Smith & Co., Knoxville, Tenn. The first vice president is R. J. Sutherland, partner in D. B. Sutherland & Sons, Bloomfield, Ky. M. W. Fuhrer, president of the Fuhrer-Ford Milling Co., Mt. Vernon, Ind., was elected treasurer, and Paul M. Marshall of Chicago returned as vice president and secretary.

On the executive committee are Mr. Attkisson and Mr. Sutherland, with Robert Davis, High Point, N.C.; K. C. Kelley, Evansville, Ind., and Thomas White, Decatur, Ala. On the grain legislative committee are Mr. Skidmore, H. C. Altmansberger, Igleheart Bros., Evansville, Ind.; Fred A. Greene, Interstate Milling Co., Charlotte, N.C.; C. B. Knappen, Jr., Knappen Milling Co., Augusta, Mich., and C. Dean McNeal, Pillsbury Mills, Inc., Minneapolis.

At the morning business session, Mr. Skidmore reviewed the activities of the past year, referring particularly to the soil bank studies and its effect on soft wheat acreage. The new president, Mr. Attkisson, delivered an inaugural address full of optimism and encouragement for the soft wheat industry as it moves in a more united front than ever before.

Fred Mewhinney of the Millers National Federation Washington office reviewed Walsh-Healey hearings and the presentation of arguments by industry witnesses from the southeast area. From this Mr. Mewhinney went into the domestic phases of the "relief" distribution, particularly as it applies to family flour and cornmeal. Others commenting on this situation see the present situation full of abuses and much more likely to expand than to shrink.

Dr. C. G. Briggle, research agronomist, Beltsville, Md., told of the work in maintaining good strains of soft wheat and their practical application through the use of the quality soft wheat laboratory in Wooster, Ohio.

Charles B. Knappen, Jr., presented figures to show that soft wheat millers were grading their harvest purchases too high on a wet crop because of inaccuracies in moisture readings. The matter was discussed and referred to Grain Legislative Committee for study.

Miss Alice Bounds, educational director of the Self-Rising Flour Institute, gave a classroom demonstration assisted by Miss Barbara Bowman. It was enthusiastically received by the large audience.

At the complimentary luncheon, Mr. and Mrs. W. Roy Sutherland were honored on their 40th wedding anniversary. Mr. Sutherland, one of the founders of the association, was manager of the Laurinburg (N.C.) Roller Mills before his retirement. Mrs. J. B. Allen of Columbia, S.C., presented Mrs. Sutherland with a corsage.

The Piedmont Allied Assn. was host at several entertainment features, with W. R. Mayes, Roanoke, president, in charge.

The next meeting of the National Soft Wheat Millers Assn. will be held at the Washington Duke Hotel, Durham, N.C., Oct. 10-11, 1957.

——BREAD IS THE STAFF OF LIFE——

ELEVATOR MANAGER DIES

ANNESS, KANSAS — Clarence E. Vulgamore, 53, manager of the grain elevator at Anness, died at his home May 6.

Clinton L. Brooke Chosen President-Elect of AACC

ST. PAUL—Clinton L. Brooke, enrichment products manager, Merck & Co., Inc., has just been named president-elect of the American Association of Cereal Chemists. The announcement of Mr. Brooke's election was made here from AACC headquarters.

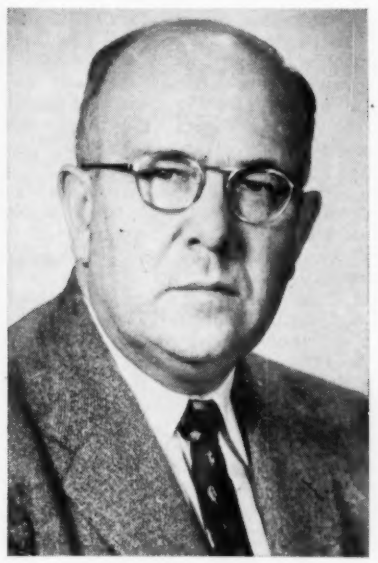
Mr. Brooke has been associated with the milling and baking industry for his entire professional life. His graduate work at the University of Minnesota was preceded by work as chemist in Uppsala, Sweden, and services as translator at the Swedish Institute of Race Biology, Uppsala. He has been associated with such American companies as Pillsbury Mills, Inc., and National Yeast Corp. He has served as national secretary of AACC since 1953.

Mr. Brooke holds membership in the American Society of Bakery Engineers, Institute of Food Technologists, American Association for the Advancement of Science, New York Bakers' Club, Bakers' Club of Chicago, and the Baltimore Bakers' Club. He has been a member of AACC since 1924.

Other officers named were: Dr. James W. Pence, chemist, wheat unit, Western Utilization Research Branch, Albany, Cal., elected secretary; Dr. Wendell Reeder, director of research, Campbell Taggart Research Corp., Dallas, Texas, elected to the board of directors for a two-year term; and Dr. I. Hlynka, chemist and section leader, wheat research unit, Grain Research Laboratory, Winnipeg, Manitoba, elected to the board for a one-year term.

The newly elected officers will be installed at AACC's 42nd annual meeting in San Francisco May 19-23. Dr. William Bradley, current president-elect, will assume the presidency at that time. More than 400 cereal chemists from the U.S., Canada and overseas countries are expected to attend.

Dr. William Bradley
New President



Clinton L. Brooke
President-Elect

USDA Announces Awards To Process CCC Corn

WASHINGTON—Only acceptances of offers to process Commodity Credit Corp. corn into cornmeal were received by mills early May 14 in the latest U.S. Department of Agriculture awards to process CCC-owned wheat and corn into flour and cornmeal for relief use.

The request by USDA for bids to process CCC wheat into 11.5 million pounds all purpose flour was withdrawn, so USDA postponed its awards of 11.5 million pounds bread flour and 80,000 lb. whole wheat flour until midnight May 15 in order to give mills that had bid only on the all purpose flour a chance to bid on the bread and whole wheat flour.

USDA telegraphed orders to mills for 23,589,000 lb. cornmeal, all for export shipment. It will be donated to U.S. private welfare organizations for free distribution abroad.

All the cornmeal will be yellow and degermed, packed in 100 lb. bags with 20 empty 5 lb. bags enclosed. All the processing charges are credit charges which means that CCC will receive that much from successful bidders.

Details of the awards are appended.

Company	Milling point	Quantity	Processing credit, 100 lb.
Illinois Cereal Mills	Paris, Ill.	2,229,000	$0.63
Miner-Hillard Milling Co.	Wilkes-Barre, Pa.	1,500,000	.65
Quaker Oats Co.	St. Joseph, Mo.	2,500,000	.65
Chas. A. Krause Milling Co.	Milwaukee	6,000,000	.682
		300,000	.592
Shawnee Milling Co.	Shawnee, Okla.	360,000	.65
Mount Vernon Milling Co.	Mount Vernon, Ind.	1,400,000	.685
Gooch Milling & Elevator Co.	Lincoln, Neb.	1,500,000	.65
General Foods Corp.	Kankakee, Ill.	2,700,000	.63
Lauhoff Grain Co.	Danville, Ill.	2,000,000	.63
	Geneva, N.Y.	1,600,000	.80
Burrus Mills, Inc.	Ft. Worth	1,500,000	.6528

Flour Bookings Drop Steadily as Bakers Await New Crop Prices

There was little to encourage flour buying in the seven-day period which ended May 13. Large chain bakeries and independents have ample flour to last roughly another 60 days. That is enough time for them to sit back and watch the new crop picture take tangible shape. For those caught short, hand-to-mouth buying for the present seems to be the rule.

One veteran mill executive termed the past week one of the quietest that he can remember. The slack situation pressed sales by mills in the central states and the spring wheat mills area down to 25 to 28% of five-day milling capacity. Sales in the Southwest were down to 18%, and other areas fared little better.

Although the running time of many mills is still fair, considering the lack of new business, most operations are dropping back to a schedule of four to five days. One large company, because of closure of one large unit by a strike, reports that it is pushing its other mills a full five days to take up the slack. Running time has been dropping back slowly, however, for a couple of weeks in most places.

Shipping directions, too, are feeling the pinch. Reports for last week ranged from "very poor" to "just fair."

There was still some optimism that a run of family flour business would develop soon, based on reports that stocks on hand are close to running out.

Flour prices were generally mixed, with mills finding it difficult to make more than rough nominal quotations because of the lack of interest.

Production by U.S. mills averaged 95% of five-day capacity last week, compared with 94% the previous week and 92% a year ago. Production at Buffalo amounted to 103% of capacity, compared with 113% the previous week and 99% a year ago.

Northwest

Minneapolis: The flour business continued to drag along in the local market. Sales were almost at the crop year low, shipping directions were just fair at best, but the running time of most mills was up a trifle. The sustained running time was causing a softness in millfeed quotations because of the lack of demand to absorb the available supply.

Sales by spring wheat mills for the week amounted to 28% of five-day capacity, compared with 41% a week earlier and 45% a year ago. Business was confined largely to p.d.s. buying by users caught short but unwilling to book in large quantities until the new crop basis is established.

Nominal quotations for bakery patents advanced 5¢ for the week. The lack of buying on the turn reflected the dearth of interest at the present time.

There was some hope for a spurt of family flour buying, but it had not developed by the end of the current period May 10.

Clears prices remained steady. Rye flour prices continued to decline, taking 10¢ dip for the week as cash prices declined. Cash rye turned upward as the new week opened May 13, giving rise to the hope that some flour buying may develop, although it is not expected to be a great deal.

Shipments by spring wheat mills amounted to 89% of five-day capacity last week, compared with 94% a week earlier and 96% a year ago.

Production by mills at Minneapolis amounted to 91% of five-day production last week, compared with 82% the previous week and 88% a year ago. Production by mills of the Northwest amounted to 99% of capacity, compared with 95% the previous week and 97% a year ago. Production by mills of the interior Northwest amounted to 103% of capacity compared with 102% the previous week and 102% a year ago.

Quotations May 10, in 100 lb. cotton sacks, carlots: Spring standard patent $5.75@5.85, short patent $5.85 @5.95, first clears $5.48@5.83, high gluten $6.30@6.40; family $6.20@7.35; whole wheat $5.85@5.95.

Southwest

Kansas City: Sales of hard winter wheat flour by southwestern mills dropped back to low levels last week after a slight spurt the previous week. Sales amounted to 18% of five-day capacity, compared with 42% a week earlier and 20% a year ago. Nearly a fifth of the week's business was for export. Domestic interest was hard to find.

Bakery flour sales continued to be almost completely lacking, with the exception of the usual p.d.s. business and an occasional replacement car or two. Most sales departments believe that the quiet will continue until new crop time. Incentives are not present. Prices were off as much as 10¢. The declining market has contributed to a feeling among bakery flour buyers that prices will go lower when the crop is harvested, and they are inclined to make their bookings last until that time. A few smaller operators may be in need of flour within several weeks, it is said, but they undoubtedly will ride along until they can't wait any longer or the price turns up. Bakery flour directions are poor to fair.

Family flour directions are spotty, with some reporting improvement while others are complaining of lack of business. New bookings are nil. Prices held steady on the nationally advertised brands but were down 10¢ on other brands.

The clears market is fairly firm, although not from strong demand. Domestic business is quiet and export workings have been rather limited. Reduced mill running time has cut the clears supplies somewhat, however, causing the firmer trend.

Quotations May 10, Kansas City, carlots, cottons: Hard winter wheat bakery short patent $5.55@5.65, standard 95% patent $5.45@5.55, straight $5.40@5.50, established brands of family flour $6.20@7.20, first clears $4.55@4.90, second clears $4.05, 1% ash and higher clears $3.70 @3.95.

Wichita: Mills operated at 91% of capacity last week. Sales averaged 40%, compared with 80% the preceding week and 35% a year ago. Shipping directions were only fair. Prices were down 5@10¢. Quotations May 10, basis Kansas City: Family $6.55, bakers short patent $5.62, first clears $4.70, second clears $4.55.

Hutchinson: The flour market was dull the past week, with demand still in a seasonal slump. A drop of 10¢ in bakery and family flour prices failed to attract serious interest from buyers. The decline was attributed to weaker tones in cash premiums and a skid in the wheat futures market. Only orders to round out contracts were of any consequence and buyers generally were waiting to see the new crop situation. Mill operations, however, were firmer than expected and the outlook was for four or five days operations.

Quotations this week, basis Kan-

(Continued on page 22)

Lack of Demand Forces Durum Prices Lower

A pronounced lack of demand was the dominant factor in the durum and semolina markets for the seven-day period ending May 10. The sluggishness came on top of several weeks of declining interest and threatened to mark the week as the poorest for business since last July.

There were steep price declines all along the line, practically the preliminary maneuvering necessary as prices and ideas begin to adjust to new crop thinking. Durum prices at Minneapolis dropped as much as 6¢, and were weak even at the lower levels. Semolina followed, winding up the week 10¢ lower than the previous quotations of May 3.

Receipts of durum, which were tight for a couple of weeks while growers busied themselves with field work, were a trifle more plentiful the past week, probably accounting for some of the price weakness. Seeding of durum is reported to be fairly well along toward completion as far north as Grand Forks, and—with favorable weather—should be finished within a few days.

Semolina buying remains in the doldrums which have characterized dealings for a couple of months, with many buyers of macaroni products amply supplied for another 60 days. Business is being sustained at a low level by a smattering of p.d.s. business, and very little of that.

Production by durum mills averaged 81% of five-day capacity last week, compared with 84% a week earlier and 99% a year ago.

Prices on durum wheat delivered at Minneapolis May 10 were as follows:

Fancy milling durum	$2.54@2.55
Choice No. 1 amber or better	2.50@2.53
Choice No. 2 amber or better	2.48@2.52
Choice No. 3 amber or better	2.46@2.50
Medium No. 1 durum or better	2.41@2.49
Medium No. 2 durum or better	2.39@2.47
Medium No. 3 durum or better	2.36@2.45

DURUM PRODUCTS OUTPUT

Durum products output of mills reporting to The Northwestern Miller, in sacks, based on five-day week:

	5-day wk. capacity	Wkly. production	% of capacity
May 6-10	156,500	127,072	81
Previous week	156,500	*131,932	84
Year ago	158,500	157,522	99
			Crop year production
July 1, 1956-May 10, 1957			6,743,182
July 1, 1955-May 11, 1956			6,492,396

*Revised.

Millfeed Business Slow as Supplies Exceed Demand

Millfeed sales were scarce during the seven-day period which ended May 10. Prices generally were $2 to $3 down from May 3 and there were some reports of offerings for resale. Contributing to the decline was the fact that some millers were grinding at a fair rate, bringing more offerings into the market already low on purchasers. On top of this, there was a lack of development of demand for middlings.

Formula feed prices dropped $1@2 ton, reflecting lower costs of a number of ingredients. Sizable drops were shown by alfalfa meal and millfeed. On the other hand soybean oil meal showed steadiness.

Reports on demand ranged from below normal to continued improvement, and in some cases business was up to the level of a year ago. This represents a welcome expansion, considering that prospects several weeks ago were anything but bright.

A lingering demand for chick starters, although not in the volume expected earlier, is being handled. Turkey feed sales are holding steady compared with the previous week and hog feed sales are also doing fairly well.

While production for May will probably not exceed that of last year, the recent improvement in demand has closed the gap, and some mills are continuing to use extra time to fill orders.

Not much change took place in formula feed markets last week. Businesss continued at about the same total level as in the preceding period and much under a year ago.

Some mills reported a slight pick up in chick starter, which has been the lagging item this spring, but the gains in this quarter were nowhere near sufficient to bring this type of business up to a normal level. Generally, such feeds have been 20% to 30% below a year ago in recent weeks.

On the other hand, hog feeds, which have been moving fairly well this spring and have been making up some of the chick starter deficit, had a mild relapse last week, enough to offset the chick gains. Some mills reported a continued good dairy feed volume, despite the excellent grass in this area. Turkey feeed volume is growing seasonally.

The formula feed business continued dull during the week ending May 10, and manufacturers report that the outlook is rather dreary. There is little in the picture to indicate that sales can be expected to show a significant rise in the next few weeks, at least, they say.

Some mills are not operating full time, and the blame is placed on the poor demand for poultry feed, including turkey feeds and chick starter rations. Hog feeds remain about the only bright spot in an otherwise dismal situation. Cattle feed contracts for the present appear to be filled.

Mills in the Northwest, Southwest, and at Buffalo, representing 75% of the combined flour milling capacities of those areas, reported production of 50,036 tons of millfeed last week. Production for the current week compared with an output of 49,102 tons in the previous week and 45,351 tons in the corresponding week of a year ago.

Wheat Markets Influenced By New Crop Thinking

Wheat prices continued to decline during the seven-day period which ended May 13 as buyers and sellers restricted their activities to await a more clear picture of the new crop situation which has now started to take more definite shape. There was sporadic firming of prices, particularly at the end of the period, but old contracts generally continued to slip.

Wheat futures prices May 13 were: Chicago—May $2.16⅞, July $2.08⅝, September $2.11⅛, December $2.15⅛; Minneapolis—May $2.22½, July $2.18, September $2.15⅞; Kansas City—May $2.14½, July $2.07¾, September $2.10, December $2.13.

Prices received the most downward pressure from the fact that trade thinking is now changing to the new crop basis, with a consequent reluctance to support old crop wheat. Cash wheat prices at Kansas City slipped almost 4¢ for the week and premiums, too, were weaker.

New crop reports also contained some bearishness which contributed to price weakness. The latest report of the hard winter wheat outlook has pushed yield estimates to about 700 million bushels, in contrast with the April 1 figure of 690 million bushels and the original estimate of 625 million bushels.

Some irregularity of price movements occurred May 9, midway in the period, as exporters purchased almost 1.7 million bushels, apparently much of it from government stocks. As a result, the May future at Chicago strengthened 2@3¢, and didn't start downward again until the end of the period May 13. There was also considerable strength given to the Chicago May contract from the fact that supplies of free wheat at that terminal are apparently low so far as the old crop is concerned.

The narrow up and down movement of the May contract at Chicago indicated that there is still some interest, and that erratic price changes may be expected before the contract is closed out May 21. The May contract is at its lowest point since last July, and recent declines have forced it below support levels. This was credited the past week with stimulating some buying, and may have the same effect again before the contract ends.

Exports the past week, exclusive of the Pacific Coast, included 700,000 bu. to Israel, 350,000 bu. to Yugoslavia, and two cargoes to the U.K.

Cash wheat at Minneapolis reflected the new crop thinking and declines of 2½ to 3¢ were registered for protein wheats up through 14%. The 15 and 16% proteins recorded declines of about 1⅝¢ for the week.

Ample rainfall continued to cover the winter wheat crop in the Southwest, generally contributing to the downward pressure on prices, although much of its effect has been discounted in the several weeks since the drouth was broken and the crop began to improve.

Receipts Increase

Receipts of wheat at primary markets for the week ended May 10 totaled 6.3 million bushels, compared with 6.1 million the week before and 5.8 million in the comparable week last year. Minneapolis receipts amounted to 1,288 cars, with 720 of them billed to CCC. Duluth arrivals totaled 1,408 cars. New crop outlook was bright, flour business was dull and cash demand was rather light. Cash basis was 3¢ lower, compared with the Minneapolis May future price, influenced by the nearness of new crop harvest in some areas of the Southwest. At the close of the week ordinary No. 1 Dark Northern Spring or No. 1 Northern Spring, through 11% protein, traded at 2@4¢ over the Minneapolis May price; 12% protein 3@4¢ over; 13% protein 5@6¢ over; 14% protein 7@9¢ over; 15% protein 11@14¢ over; 16% protein 24@29¢ over the May.

Demand for durum wheat was narrowed again this week and prices were reduced 4 to 6¢ throughout the entire price schedule. Average protein of the hard red spring wheat tested at Minneapolis during the week was 13.48%, compared with 13.38% the same week last year. Durum wheat tested at Minneapolis during the week averaged 11.58%. (See tables on page 14.)

The approximate range of cash wheat prices at Minneapolis May 10 is shown in the accompanying table together with premiums and discount factors:

No. 1 Northern or No. 1 Dark Northern Spring, 58 lb.

Ordinary		$2.24⅝@2.26⅝
11%	Protein	2.24⅝@2.26⅝
12%	Protein	2.25⅝@2.26⅝
13%	Protein	2.27⅝@2.28⅝
14%	Protein	2.29⅝@2.32⅝
15%	Protein	2.34⅝@2.37⅝
16%	Protein	2.47⅝@2.52⅝

Protein premium for over 16%, 1¢ each 1/10% higher.

Test Weight Premium and Discount Scale

One cent premium each lb. over 58 lb.; 1¢ discount each ½ lb. under 58 lb.

Cash Declines

Cash hard winter wheat at Kansas City declined in price 2@2½¢ in the week ended May 13, with the basic May option off 1⅝¢, to a quotation of $2.14½, and the premium structure ½@1¢ weaker than on May 6. The premium decline was noticed during most of the week until it steadied May 10. The 1¢ decline was taken on the high side of 11.75% and higher, and on the low side of 12.5% and over protein wheat.

Offerings were very light and hardly permitted an adequate testing of the price structure. There were indications that mills would have been interested in more samples, possibly because of a further contraction of country offerings and because wet weather may delay the new crop. Merchandisers generally displayed less interest than mills.

Carlot sales indicated on the Kansas City Board of Trade for last week amounted to 33 cars. "To arrive" offerings were light. Receipts totaled 546 cars, compared with 442 the previous week and 318 a year ago.

Indicated premiums on May 13 were as follows: Ordinary 3½@4¢ over the basic May option of $2.14½, 11.75% protein 3½@9¢ over, 12% protein 3½@11¢ over, 12.5% protein 4@11½¢ over, 13% protein 4½@12¢ over, 13.5% protein 5@12½¢ over, 14% protein 5½@13¢ over.

The approximate range of cash wheat prices at Kansas City May 10 is shown in the accompanying table:

No. 1 Dark and Hard	$2.16¾@2.30¼
No. 2 Dark and Hard	2.15¾@2.29¾
No. 3 Dark and Hard	2.14¾@2.27¾
No. 4 Dark and Hard	2.13¾@2.25¾
No. 1 Red	2.16¼@2.18¾
No. 2 Red	2.15¼@2.18¼
No. 3 Red	2.14¼@2.17¼
No. 4 Red	2.13¼@2.16¼

At Ft. Worth No. 1 hard winter wheat was reported selling May 13 at $2.41@2.42, delivered Texas common points. Demand was fair and offerings were light.

Wheat for export was dropped 5¢ bu. for the white and hard winters last week by CCC, an indication of a desire to lower prices before new crop is available. Exporters have booked almost to capacity for June. Only one cargo was sold for June shipment. It was to India, which entered the market early in the week asking for unlimited offerings. Three more cargoes of white were taken by India for July and August at seller's option. Japan also bought two cargoes of white and one hard winter, in addition to a cargo of two-row barley. CCC offered six cargoes of white for acceptance Friday, but no confirmation could be obtained that they had been sold. It was expected they would, however, be as the price at which it was offered was highly competitive in world markets. Crop conditions were unchanged in the Pacific Northwest with ample moisture in the soil and the weather not too hot.

——BREAD IS THE STAFF OF LIFE——

ELEVATOR MANAGER DEAD

PRATT, KANSAS—Wilber F. Gillet, 78, manager of the General Mills, Inc., elevator at Coats, Kansas, died in Pratt May 9.

CURRENT FLOUR PRODUCTION

★ ★ ★ ★ ★

A Statistical Service Provided Continuously for Readers of The Northwestern Miller for More Than Half a Century

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to The Northwestern Miller with relationship of production to capacity and to the total estimated output of all mills in the U.S. expressed in percentages:

	May 6-10, 1957	*Previous week	May 7-11, 1956	May 9-13, 1955	May 10-14, 1954
Northwest	658,718	634,761	672,388	618,379	620,249
Southwest	1,323,842	1,252,115	1,118,408	1,120,790	1,057,265
Buffalo	488,389	537,958	470,214	482,501	499,634
Central and Southeast	519,956	477,966	494,051	544,715	506,211
North Pacific Coast	291,172	293,099	311,648	291,406	323,487
Totals	3,282,077	3,195,899	3,066,709	3,057,791	3,006,846
Percentage of total U.S. output	74.3	74.3	75	75	75

*Revised.

	Percentage of capacity operated in 5-day week					Crop year flour production July 1 to	
	May 6-10, 1957	Previous week	May 7-11, 1956	May 9-13, 1955	May 10-14, 1954	May 10, 1957	May 11, 1956
Northwest	99	95	97	87	84	30,868,027	30,024,111
Southwest	100	95	86	86	81	59,834,823	56,644,487
Buffalo	103	113	99	101	111	24,672,827	20,622,929
Central and S. E.	91	84	87	80	76	24,156,297	24,833,501
N. Pacific Coast	82	83	88	84	93	13,775,454	13,336,658
Totals	95	94	92	89	89	153,307,428	145,461,686

SOUTHWEST

Kansas City

	5-day week capacity	Flour output	% activity
May 6-10	287,500	276,423	96
Previous week	287,500	*237,163	83
Year ago	278,500	255,520	92
Two years ago	279,850	220,868	79
Five-year average			87
Ten-year average			85

50 Representative Mills Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% activity
May 6-10	1,032,500	1,047,419	101
Previous week	1,032,500	*1,014,952	98
Year ago	1,021,900	925,888	91
Two years ago	1,021,350	899,922	88
Five-year average			89
Ten-year average			86

*Revised.

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% activity
May 6-10	570,250	519,956	91
Previous week	570,250	*477,966	84
Year ago	570,250	494,051	87
Two years ago	671,400	506,211	76
Five-year average			78
Ten-year average			76

*Revised.

BUFFALO

	5-day week capacity	Flour output	% activity
May 6-10	475,000	488,389	103
Previous week	475,000	537,985	113
Year ago	475,000	470,214	99
Two years ago	459,500	482,501	105
Five-year average			96
Ten-year average			98

NORTHWEST

Minneapolis

	5-day week capacity	Flour output	% activity
May 6-10	237,000	216,663	91
Previous week	237,000	*193,973	82
Year ago	237,000	208,660	88
Two years ago	232,500	218,221	93
Five-year average			86
Ten-year average			83

*Revised.

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% activity
May 6-10	430,500	442,055	103
Previous week	430,500	*440,788	102
Year ago	454,500	463,728	102
Two years ago	487,250	400,158	83
Five-year average			86
Ten-year average			80

*Revised.

PACIFIC COAST

Principal mills on the North Pacific Coast:

Seattle, Tacoma and Interior Washington Mills

	5-day week capacity	Flour output	% activity
May 6-10	215,200	166,721	77
Previous week	215,200	166,701	77
Year ago	215,000	173,465	81
Two years ago	215,000	162,096	75
Five-year average			81
Ten-year average			78

Portland and Interior Oregon Mills

May 6-10	138,750	124,451	90
Previous week	138,750	126,398	91
Year ago	138,750	138,183	100
Two years ago	133,200	129,310	97
Five-year average			89
Ten-year average			86

MILLFEED OUTPUT

Production of millfeed in tons for week ending May 10, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour production.

	Southwest*		Northwest*		Buffalo†		Combined**	
	Weekly production	Crop year to date	Weekly production	Crop year to date	Weekly production	Crop year to date	Weekly production	Crop yr. to date
May 6-10	26,807	1,211,623	13,339	624,487	9,890	499,608	50,036	2,335,718
Prev. week	‡25,355		‡12,854		10,893		‡49,102	
Two wks. ago	24,892		13,453		9,656		48,001	
1956	23,055	1,138,865	13,121	603,334	9,175	418,727	45,351	2,160,926
1955	22,695	1,112,710	12,479	696,083	9,739	473,653	44,913	2,282,446
1954	21,409	1,065,402	11,254	614,963	9,653	443,840	42,316	2,124,205
1953	21,605	1,165,428	13,827	675,924	9,248	447,079	44,680	2,288,431

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

Milling Industry is Theme of Junior Achievement in Minneapolis; Dinner Climaxes Year of Business Activity

MINNEAPOLIS — Nearly 1,200 junior businessmen and businesswomen, their sponsors and counselors gathered here last week for the annual awards dinner of Junior Achievement. The flour milling industry was selected as the theme of the dinner.

Decorations and the guest list reflected the salute of the milling industry to the young men and girls who organized their own business during the past year.

The master of ceremonies was Totton P. Heffelfinger, president of Van Dusen Harrington Co., who praised the Achievers for a successful year and pointed out that, although their individual businesses might be small, they add up to impressive figures.

In Minneapolis this year were 46 Junior Achievement companies with a total capitalization of $5,049. Members sold 9,963 shares of stock in their enterprises, manufactured 14,986 units and sold 13,426 of them. Total sales were $16,669, and profits were $2,535, Mr. Heffelfinger reported.

Carrying out the milling industry's place in this year's activity, a 2-lb. package of flour was given to those attending—the special package carried the compliments of the Minneapolis milling industry and the following copy based on standard labeling practice:

"Enriched experience — 100% of enriched experience contains not less than the following proportions of the minimum daily requirement of: Sales ability 33⅓%, manufacturing skill 33⅓% and business management 33⅓%."

On the reverse these firms were honored for their contribution to Junior Achievement in 1957; the Atkinson Milling Co.; Commander-Larabee Milling Co.; General Mills, Inc.; International Milling Co.; King Midas Flour Mills; Pillsbury Mills, Inc., and the Russell-Miller Milling Co.

The principal speaker of the evening was Ron Kennedy, vice president of F. H. Peavey & Co., who spoke for the milling industry. He entitled his address "Tempering."

"Tempering is a milling term for the process of toughening and conditioning wheat prior to making it into flour," Mr. Kennedy said. "It also describes what you've been through as Junior Achievers.

"Proper tempering must penetrate to the very heart of the wheat grain —what better way to characterize the conditioning you've had for adult life?"

"If you have learned to put out just that little extra bit of effort in whatever you do, you will stand out like stars in the world of tomorrow."

G. A. MacNamara, president of the Soo Line Railroad, as dinner chairman, brought forward a flour sack filled with the awards to be presented.

John Rimarcik, president of the Achiever Assn., presented $165 in checks from JA firms to the Junior Achievement fund drive and $650 to American Field service for foreign exchange student scholarships.

Awards and special honors were given to outstanding Achievers and to their advisers.

John Burger, General Mills, Inc., Minneapolis, a board member of Junior Achievement, was honored for the most outstanding contribution to JA during the year—in his absence the plaque was presented to Mrs. Mary Jean Burger.

The JA company sponsored by Archer-Daniels-Midland Co. won the award for the best stockholders' report, and the company sponsored by the F. H. Peavey & Co. was honored for carrying out the best public relations and publicity activity.

Representing Minneapolis milling companies at the honor table during the awards dinner were Atherton Bean, president of the International Milling Co.; Harry A. Bullis, chairman of the board, General Mills, Inc.; Ellis D. English, president of Commander-Larabee Milling Co.; Philip W. Pillsbury, chairman of the board, Pillsbury Mills, Inc.; and Robert Woodworth, vice president of Cargill, Inc., in addition to Mr. Heffelfinger and Mr. Peavey. Leslie F. Perrin, formerly of General Mills and presently chairman of the Federal Reserve Board, also attended.

Members of the milling industry also served on the banquet committee, under Mr. MacNamara as chairman. They included John B. Bean, International Milling Co.; Dean Belbas, General Mills, Inc.; James G. Bennett, Jr., Pillsbury Mills, Inc.; Mr. Burger; Frank W. Cooley, Jr., The Northwestern Miller; Logan P. Johnson, Atkinson Milling Co.; W. T. Kirk, International Milling; John T. Larson, Russell-Miller Milling Co.; Walter O. Stack, King Midas Flour Mills, and John A. Wickland, Archer-Daniels-Midland Co.

——BREAD IS THE STAFF OF LIFE——

Purchase Elevator

PORTLAND—The Touchet Valley Grain Growers have purchased the land, buildings and all elevator equipment of the Preston-Shaffer Milling Co. at Waitsburg, Wash. Ray Reed, manager of Touchet Grain Growers, says the Waitsburg elevators will be used for grain storage. Preston-Shaffer Co. recently sold its Milton-Freewater mill to the Centennial Flouring Mills Co. and shut down operations at its Athena mill May 1.

Kansas-Missouri River Mills Rail Transit Request Denied

KANSAS CITY—A request by the Kansas-Missouri River Mills, traffic organization representing mills in that area, for milling-in-transit privileges at 10 central Kansas points on wheat originating in southeastern Kansas and destined for eastern points, was denied by the Western Trunk Line Traffic Committee, following a hearing in Chicago May 8. J. Walter Holloway, executive secretary of the Kansas-Missouri group, was informed of the railroads decision May 13. The request was opposed by the Kansas City Board of Trade.

The request for transit, which was sought for one year only, was based on crop conditions in Kansas this year. Due to acreage restrictions, soil bank agreements and drouth last fall, the wheat crop is short in western two-thirds of Kansas, which normally supplies most of the requirements of interior mills in the state. In testimony presented at the hearing, Mr. Holloway said that on the basis of conditions then existing some 35% of the state's total crop would be in the southeastern counties and would be inaccessible to most Kansas mills, unless the transit were granted.

The transit privilege was sought for mills on the Santa Fe, Missouri Pacific and Frisco Railroads at Abilene, Arkansas City, Buhler, Hutchinson, McPherson, Newton, Salina, Wellington, Wichita and Winfield on the basis of through rates origins to Chicago on the Santa Fe and to St. Louis on the Missouri Pacific, made on the St. Joseph combination which is about 2¢ higher than the Kansas City combination. Established rates with out of line haul would put the cost of southeastern Kansas wheat up to 10¢ out of line for these mills on eastern business.

Opposition to the proposal came from the Kansas City Board of Trade which contended at the hearing that movement of southeastern Kansas wheat to the milling points named would be harmful to the Kansas City market.

——BREAD IS THE STAFF OF LIFE——

Kentucky to Bring Food, Drug Law Up to Date

LOUISVILLE, KY. — Kentucky food-and-drug laws, unchanged materially since their enactment in 1908, will be rewritten next year to conform to a uniform national code.

This was announced May 8 by Lt. Gov. Harry Lee Waterfield in an address to the National Association of Food and Drug Officials here.

A state-wide committee appointed by Dr. Russell E. Teague, state health commissioner, has been studying the problem since last spring. Its recommendations will be submitted to the Legislative Research Commission, Lt. Gov. Waterfield said.

Bills then will be written for the consideration of the General Assembly when it convenes in January.

Daily Flour Output Down for April

Flour production by U.S. mills in April, as estimated on the basis of weekly reports to The Northwestern Miller from mills believed to account for 75% of the total U.S. output amounted to 18,980,500 sacks. Daily average output for the 22 working days was about 862,800 sacks, according to the report.

The total April production decreased from March in spite of the one additional working day. Total production in April was above that of the same month a year ago, however, and the number of working days was one more.

Daily average output in April of 1957 was more than the April, 1956, average.

The estimated April production by U.S. mills of 18,980,500 sacks represented a decrease of 3.5% from March production of 19,679,000 sacks. The output was 9.2% above the 17,378,000 sack total in the same month a year ago, however.

The April estimated daily average output of 862,800 sacks represented a decline of 7.9% from the March average of 937,000 sacks. Compared with the 828,000 sack average in April of 1956, production was up 4.2%, however, according to the report.

U. S. Wheat Flour Production for April, 1957

Mills reporting are believed to account for approximately 75% of the total U.S. wheat flour output. Figures for Buffalo, Kansas City and Minneapolis represent 100% of production at those points.

	April, 1957	March, 1957	April, 1956
Minneapolis	944,300	940,700	813,700
Interior Northwest	1,885,200	1,956,500	1,808,000
NORTHWEST	**2,829,500**	**2,897,200**	**2,621,700**
Kansas City	1,088,000	1,173,100	1,066,800
Interior	4,478,800	4,397,200	4,057,700
SOUTHWEST	**5,566,800**	**5,570,300**	**5,124,500**
BUFFALO	**2,301,500**	**2,269,800**	**1,912,100**
CENTRAL AND SOUTHEAST	**2,167,900**	**2,317,100**	**2,236,000**
NORTH PACIFIC COAST	**1,236,800**	**1,250,400**	**1,225,300**
TOTALS	**14,102,500**	**14,304,800**	**13,119,600**
Percent of U.S. Total	74.3	72.7	75.5
ADJUSTED ESTIMATES, U.S.	**18,980,500**	**19,679,000***	**17,378,000***
AVERAGE PER DAY	**862,800**	**937,000***	**828,000***

*Production reported by the Bureau of the Census, U.S. Department of Commerce.

Weekly IWA Sales Report

WASHINGTON—The U.S. Department of Agriculture has reported that during the period May 1-7 the Commodity Credit Corp. confirmed sales of 1,032,000 bu. wheat (including wheat and wheat flour in terms of wheat equivalent) for recording under the International Wheat Agreement against the 1956-57 year quotas.

The sales for the week included 81,649 cwt. flour (189,000 bu. in wheat equivalent) and 843,000 bu. wheat. The importing country principally involved in sales was Israel.

Cumulative sales by the U.S. since the opening of quotas for the 1956-57 year on June 25, are 116,430,000 bu. Cumulative sales by Canada are 57,758,000 bu. and by Australia 24,765,000 bu.

COMMUNICATION SYSTEM—Jack Gensarelli, chief operator, left, for Continental Grain Co. and Henry Gramkow of the American Telephone and Telegraph Co., examine tapes at the SCATS installation in the New York office of Continental.

Continental Grain Co. Installs New Teletypewriter System

NEW YORK — A semi-automatic teletypewriter system connecting 36 locations of the Continental Grain Co. throughout the U.S. and Canada was installed recently by the American Telephone and Telegraph Co. The system is called SCATS, the letters being derived from Sequentially Coded Automatic Transmitter Start System.

S. D. Buell, comptroller of Continental stated, "In our business, complete and fast communication between offices ranging from the smallest country elevator to the largest grain terminal and the Chicago and other boards of trade is of the utmost importance."

Any point on the network can be automatically selected through the use of perforated tape which is prepared, coded and automatically transmitted by the sending location. By automatically transmitting messages on this system, maximum line speed is attained regardless of the typing ability of the originating operator.

The new system has been engineered especially for Continental with a view toward saving operator time at each location on the network as well as increasing the speed in handling of grain orders and other messages. It is estimated that the system will provide an overall 40% increase in efficiency over the old manual system used in the past.

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—BREAD IS THE STAFF OF LIFE—

BARLEY EXPORTS

WINNIPEG—Barley exports from Canada climbed to 5,746,000 bu. in March and included 2,948,000 bu. for Germany. The balance was about equally divided between the U.K. and the U.S. March clearances boosted Canadian barley exports since Aug. 1, 1956, to 56,095,000 bu. Of this total the U.K. received 23,599,000 bu.; U.S. 15,385,000; Japan 8,461,000, and Germany 7,517,000 bu. Five other destinations were listed.

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Wheat-Receiving Elevators in Manitoba
Saskatchewan and Alberta

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HEAD OFFICE: MONTREAL WESTERN OFFICE: WINNIPEG

Tabloid History of the Millers National Federation

ORGANIZATION of the Millers National Federation was perfected March 25, 1902, at a meeting in Chicago attended by millers representing 23 state and sectional associations. The new organization supplanted an older one, the Millers National Assn., formed in 1874.

The organization meeting had been preceded by a preliminary conference held in Chicago Feb. 12 and 13, 1902, with the following delegates in attendance: Bernard A. Eckhart, representing Chicago millers; John Heywood and Seymour Carter, Millers Club, Minneapolis; A. J. Meek and J. L. Grigg, Southern Illinois State Millers Assn.; Hosea B. Sparks and Charles H. Seybt, Illinois State Millers Assn.; A. R. James and Charles B. Cole, Millers National Assn.; Hebert Hackney and George M. Randall, Kansas Millers State Assn.; William C. Ellis and Charles T. Neale, St. Louis Millers Club; William N. Rowe and G. F. Allmendinger, Michigan State Millers Assn.; L. M. Miller and R. E. Kidder, Kansas City Millers Club; Henry Lassen and George Sohlberg, Oklahoma Millers Assn.; Edward P. Bronson and J. B. Little, millers of Tennessee and Georgia; Joseph Le Compte and John I. Logan, Kentucky Millers Assn.; L. S. Meyer and J. F. Dunwoody, Southwest Missouri Millers Assn.; Alphonse Mennel and C. L. Cutter, Toledo Millers Club; Edgar H. Evans and H. M. Davis, Winter Wheat Millers League; Asher Miner, Pennsylvania State Millers Assn., and Walter Stern and Charles Manegold, Milwaukee Millers Assn.

Mr. Eckhart was made permanent chairman of the preliminary conference, succeeding the temporary chairman, Hosea B. Sparks. C. V. Topping served as secretary.

Lack of Support

Charles B. Cole, speaking in behalf of the Millers National Assn., said that it had not continued in effective service because of lack of support. He promised its cordial cooperation to the new organization and its good-will was pledged. A. R. James, the other delegate from the association, and J. E. Howard, William N. Rowe, J. L. Grigg and A. J. Meek, directors, endorsed Mr. Cole's statement.

A committee comprising Messrs. Eckhart, Ellis, Carter, Miner, Evans, Mennel and Rowe devised a plan for permanent organization, and this was adopted at the meeting on March 25, when representatives of 23 state and sectional associations were present.

Most of the delegates accredited to the preliminary meeting were present at the organization meeting. In addition, H. D. St. John and J. L. Iles represented the Iowa State Millers Assn.; C. V. Topping, the Oklahoma Millers Assn.; W. W. Pollock and L. T. Hand, Northern Missouri Millers Assn.; W. N Anderson, Milwaukee Millers Assn.; H. S. Kennedy, Southern Minnesota Millers Assn.; E. van Houten, Red River Millers Club; F. A. McClelland and H. G. Stinnett, Texas Millers Assn., and Thomas L. Moore and Dwight M. Baldwin, Central Minnesota Millers Assn.

The officers chosen at the March meeting or subsequently appointed were as follows: Bernard A. Eckhart, Chicago, president; H. L. Little, Minneapolis, first vice president; E. O. Stanard, St. Louis, second vice president; William C. Ellis, St. Louis, treasurer; H. S. Kennedy, Chicago, secretary; Herbert Bradley, New York City, traffic manager. To serve with Mr. Eckhart on the board of directors, the following were named; H. L. Little, Minneapolis; E. O. Stanard, St. Louis; William C. Ellis, St. Louis; Edgar H. Evans, Indianapolis; Charles C. Bovey, Minneapolis; William N. Anderson, Milwaukee; Herbert Hackney, Topeka, Kansas; J. N. Rayzor, Denton, Texas; William N. Rowe, Grand Rapids, Mich.; C. L. Cutter, Toledo; Asher Miner, Wilkes-Barre, Pa.; M. H. Davis, Shelby, Ohio; C. T. Ballard, Louisville, Ky.; C. E. Angle, Rochester, N.Y.; E. P. Bronson, Nashville, Tenn.; Seymour Carter, Hastings, Minn.

Mr. Kennedy set up an office at 612 Royal Insurance Bldg., in Chicago. Twenty-six millers' organizations were enrolled as members, representing about a thousand individual millers.

"Not for Self, But for All"

Thus was born the Millers National Federation, which adopted the motto, "Not for Self, But for All."

The Millers National Assn., supplanted by the federation, had become moribund through a lack of effective administrative machinery and because of a lapse in the industry's will to work as a unit in dealing with common problems. Its earlier years had been distinguished. It came into being for the purpose of defending the industry against purifier infringement litigation. Subsequent industry problems, one of them the protection of millers against unfair ocean transportation practices and charges, proved too much for it. William C. Edgar, editor of The Northwestern Miller, who was active in supporting the old association and in forming the new one, had this to say of the era of transition:

"Several attempts were made to rejuvenate the association, but they were unsuccessful, and, realizing that it was moribund and that the industry was greatly in need of a live national organization, The Northwestern Miller was reluctantly compelled to turn its influence definitely against its former ally, with the intention of replacing it by a more representative and effective national body."

In 1891 more than 100 mills withdrew from the old association. Its convention, held that year in New York City, was the last meeting attended by more than 20 persons. By 1896 the attendance had shrunk to 10, and by 1902 the officers recognized the futility of any attempt to keep the association alive.

The Federation's Purposes

The purposes of the federation, as set forth in the articles of incorporation, are as follows:

(1) To promote the welfare of the wheat flour milling industry of the U.S.

(2) To provide a means of contact with appropriate federal and state agencies.

(3) To promote good relations with the general public and an understanding by the public of the economic functions performed by the milling industry.

(4) To perform a general trade service of education among the millers of the U.S. by the dissemination of statistical and economic information.

(5) To conduct educational and promotional activities among consumers for the purpose of obtaining increased acceptance of mill products.

(6) To improve the methods and practices of the industry in the manufacture and distribution of its products.

(7) To establish appropriate relationships with other agencies and associations.

(8) To inculcate and promote a spirit of public service and responsibility among the members of the industry.

From 1902 until 1924, the federation membership continued to consist of state and sectional associations. In 1924 the setup was changed to a direct membership organization of individual companies, the system which has prevailed up to the present time.

Distinguished Leadership

Leadership of the federation has been in distinguished hands. The list of top executives (presidents, except as otherwise noted) contains these names together with the years of service in office:

Bernard A. Eckhart, B. A. Eckhart Milling Co., Chicago, Ill., 1902-04; Charles Espenschied, Gardner Mills, Hastings, Minn., 1904-06; John W. Burk, Ansted & Burk Co., Springfield, Ohio, 1906-08; William E. Castle, Ballard & Ballard Co., Inc., Louisville, Ky., 1908-10; Dwight M. Baldwin, Jr., Baldwin Flour Mills Co., Minneapolis, Minn., 1910-11; Hosea B. Sparks, Sparks Milling Co., Alton, Ill., 1911-12; Andrew J. Hunt, New Era Milling Co., Arkansas City, Kansas, 1912-14; Mark N. Mennel, Mennel Milling Co., Toledo, Ohio, 1914-16; Samuel Plant, George P. Plant Milling Co., St. Louis, Mo., 1916-18; Fred J. Lingham, Federal Mill, Inc., Lockport, N.Y., April-July, 1918 (resigned to become chief of the flour milling division of the U.S. Food Administration 1917-18); E. M. Kelly, Liberty Mills, Nashville, Tenn., 1918-20; A. L. Goetzmann, Listman Mills Co., Minneapolis, Minn., 1920-22; Charles L. Roos, Hunter Milling Co., Wellington, Kansas, 1922-24.

In 1924, the executive setup was changed, Sydney Anderson, General Mills, Inc., Minneapolis, becoming president on a full-time basis, and the following successively holding the office of chairman of the board of directors: Tipton S. Blish, Bish Milling Co., Seymour, Ind., 1924-25; Benjamin W. Marr, Gwinn Milling Co., Columbus, Ohio, 1925-27; Henry L. Beecher, Eagle Roller Mill Co., New Ulm, Minn., 1927-29; Carl B. Warkentin, Midland Flour Milling Co., Kansas City, Mo., 1929-31; Edgar H. Evans, Acme-Evans Co., Indianapolis, Ind., 1931-32; Frank Hutchinson, Lawrenceburg Roller Mills Co., Lawrenceburg, Ind., 1932-33.

In 1932, the office of president was reestablished to supplant the chairmanship of the board, and Fred J. Lingham, Federal Mills, Inc., Lockport, N.Y., became the incumbent. He was succeeded by Jess B. Smith, Associated Millers of Kansas Wheat (Shellabarger Mills), Salina, Kansas, in 1934. With the inauguration of a campaign to increase flour consumption, sponsored by the federation, and the creation of the Wheat Flour Institute, Mr. Smith served as full-time president from 1934 to 1937, with Frank J. Allen, Bay

(Continued on page 21)

The Northwestern MILLER
MILLING PRODUCTION SECTION

Evaluation of Three Spot Fumigant Formulations

By G. D. White, H. H. Walkden and H. D. Nelson
Stored-Product Insects Laboratory, Manhattan, Kansas

A comparative study of the performance and cost of three spot fumigant formulations in three flour mills was conducted during the period March, 1955, to March, 1956. In two of the mills the fumigants were applied by pouring from bottles directly into the machinery units. In the third the fumigant was applied under pressure from a semi-automatic dispenser. The mills were spot fumigated at monthly intervals. In two of them methyl bromide was used in machinery and bulk flour bins not accessible or adapted to spot fumigation with liquid fumigants.

The insect populations were determined by drawing monthly samples of stock from the elevator boots and by the mortality of test insects confined in cages placed in the various mill machinery units before each fumigation.

Spot fumigation, although reasonably effective, did not completely control insect populations, as indicated by the percentage of elevator boots infested. However, when general fumigations eliminated insect infestation, all three formulations maintained a satisfactory low level of insect infestation for several months.

Gas concentrations taken while the spot fumigants were being applied revealed that dangerous amounts of fumigant vapors were present in the mill atmosphere. Operators should use gas masks during the application of the fumigant.

The mechanical application of the fumigant proved to be the more economical of labor requirements.

The sanitation committee of the Association of Operative Millers recognized the need for evaluating the spot fumigants in common usage in flour mills at the present time. Arrangements were made for a comparison of three formulations typical of this group, but it was not feasible to include representatives of all types. The committee planned the study; Pillsbury Mills, Inc., provided a site at Springfield, Ill., for the tests, labor for application of the treatments and for sampling, and records of labor costs; the Dow Chemical Co. provided materials and performed analysis studies; E. H. Leitte Co. provided equipment and materials; and the stored-product insects laboratory evaluated the results.

Materials, Procedures and Equipment

The three flour mills of the Pillsbury Mills, Inc., located at Springfield, Ill., were made available for the study. These mills, designated as mills A, B, and C, have production capacities as follows: Mills A and B, 4,000 cwt. per 24 hours; Mill C, 8,500 cwt. per 24 hours.

Mills A and B were identical and were back to back in the same building. Mill C was located in an adjoining building.

Three spot fumigant formulations were used:

1. Fumigant No. 1, applied in Mill A

Ethylene dibromide ....20.4% by wt.
Ethylene dichloride ....19.6% by wt.
Carbon tetrachloride ...60.0% by wt.

2. Fumigant No. 2, applied in Mill B

Carbon tetrachloride .66% by volume
Acrylonitrile .....34% by volume

3. Fumigant No. 3, applied in Mill C

Ethylene dibromide .....59% by wt.
Carbon tetrachloride ..32.5% by wt.
Ethylene Dichloride .... 8.5% by wt.

Methyl bromide was used in mills A and B in machinery and bulk flour bins not accessible or adapted to spot fumigation with liquid fumigants. These were the flour pick-up conveyors, packer bins, long stock-carrying conveyors, and the bulk flour bins. The methyl bromide was released directly from 1-pound cans into these units.

Mills A and B. In general, 16-fluid ounce dosages of fumigants No. 1 and 2 were used at points of application in mills A and B, respectively, except in purifier and reel conveyors, where eight-fluid ounce dosages were applied.

The average amount of spot fumigant used per mill in each treatment was 40 gal., plus approximately 65 lb. of methyl bromide.

Mill C. Three-fluid ounce dosages of fumigant No. 3 were used at points of application during spot fumigation up to and including the fumigation of Aug. 21, 1955. In the subsequent fumigations, 4-oz. dosages were applied. The average amount of fumigant No. 3 used per fumigation was approximately 16¾ gal. No methyl bromide was used.

Fumigants No. 1 and 2 were applied by pouring the required dosage into the machinery, elevator boots, purifier conveyors, reel conveyors, dead boxes, and stocking dust collector trunks.

Fumigant No. 3 was applied with a semi-automatic dispenser. This apparatus consisted of the fumigant storage tank, which was placed on the top floor of the mill. A ⅜-in. copper tube ran from the tank to the ground floor, with one valve outlet on each floor. Air pressure, 80 to 100 p.s.i., was applied to the tank, forcing the fumigant through the feeder line.

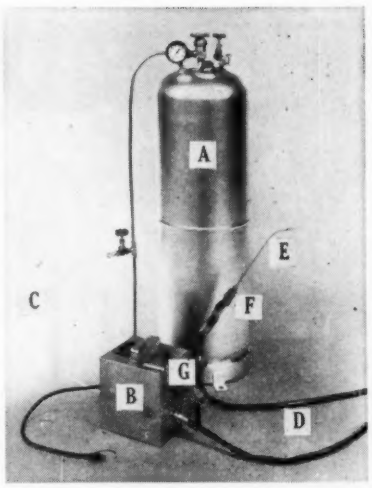

FIGURE 1—Apparatus for applying measured amounts of fumigant in spot fumigation of flour mills. A—Fumigant storage tank. B—Applicator box. C—Feeder line from storage tank. D—Shooting hose. E—Applicator nozzle. F—Compression switch. G—Timer control.

FIGURE 2.—Applying measured amounts of fumigant to elevator boots in the spot fumigation of flour mills.

A metering device was connected to the valve in the feeder line by ¼-in. polyethylene tubing. The device was carried from floor to floor during the application of the fumigant. The outlet from it was 5/16-in. and was designated as the "shooting hose." The applicator nozzle was attached to the end of this hose. Just before the nozzle there was a compression switch. When this switch was pressed, the electrical timer and metering device were activated.

The amount of fumigant delivered in each cycle was predetermined by adjustment of the timer control on top of the device. This amount could be varied from one to eight fluid ounces per cycle and multiple dosages could be applied by running the instrument through two or more cycles.

In operation, the meter was taken to each floor of the mill and attached to the supply line. The predetermined dosage of fumigant then was applied to each machinery unit.

The fumigants were applied by the Pillsbury mill fumigation crew of four men. The time required to apply the fumigant was 16 man-hours each for mills A and B and six man-hours for mill C. In addition, each mill required six man-

(Continued on page 14a)

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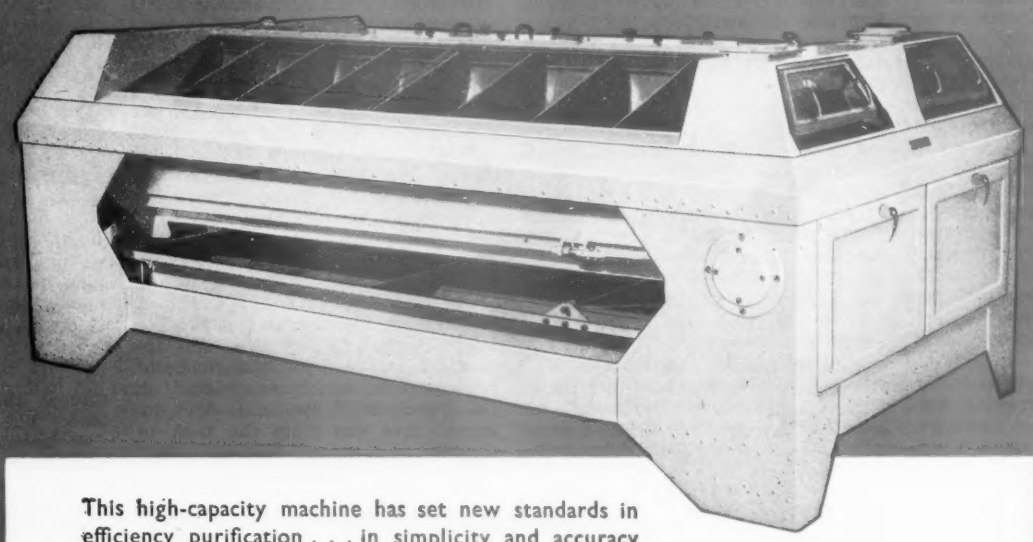

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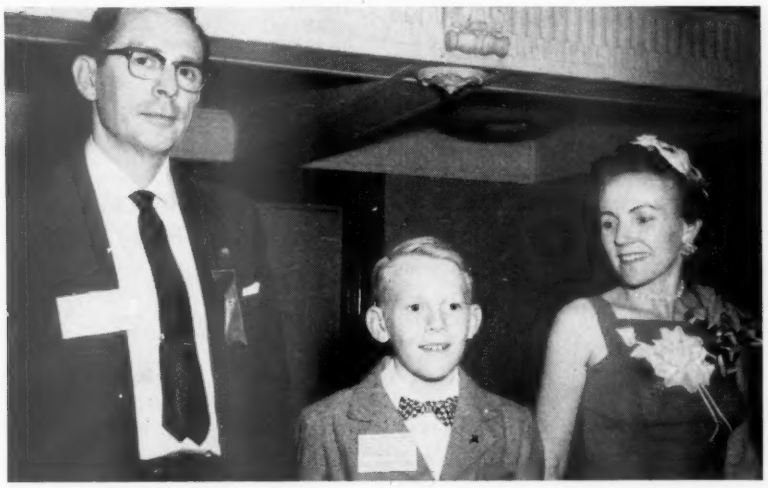
AOM Camerama . . .

MACHINERY EXHIBITS — Milling machinery exhibits were prominent during the AOM Trade Show; some of them are shown above. At the left operative millers look over a MIAG purifier. Left to right are Hans F. Koch and Ernst Auer of the MIAG firm, Minneapolis; R. C. Bradford, Pillsbury Mills, Inc., Minneapolis; Paul Wagner, Russell-Miller Milling Co., Alton, Ill., and Peter Goldberg of the machinery firm. (Center) Hans Traber, Buhler Bros. (Canada) Ltd., Toronto, and Fritz Schiess, Buhler Mill Engineering Co., Minneapolis, at their booth. (Right) In the Thomas Robinson booth are Michael Fanning, Robinson representative, Minneapolis; Denys Povey, Rochdale, England, and Harry L. Donovan, Anaconda, Sao Paulo, Brazil.

IN THE AOM BOOTHS—The illustration at the left above shows three representatives of the Victor Balata & Textile Belting Co., Easton, Pa., at their booth: T. R. Thatcher, Jr., Richard Vollrath, vice president of Victor Balata, and Richard Hartung. (Left Center) Jay Langhammer, Roanoke (Va.) City Mills, and C. R. Veeck, Smico Sales Co., DeKalb, Ill., examining some of the new Smico equipment. (Right Center) H. S. Sayre of the Fuller Co., Catasauqua, Pa. (Right) A new instrument of the Brabender Corp., Rochelle Park, N.J., is shown by William Kleppner to C. L. Brooke, Merck & Co.



PRESIDENT'S FAMILY—During the annual banquet of the Association of Operative Millers, the retiring president, William P. Riley, Wm. Kelly Milling Co., Hutchinson, Kansas, brought his wife and son to the head table to share in his honors. In the center is his son Jack, and Mrs. Riley. Many milling wives were present.

CONGRATULATIONS—Lyle C. Mertz, General Mills, Inc., Buffalo, is shown in the center above being congratulated on his election as president of the Association of Operative Millers. At the left is Arthur N. Hibbs, International Milling Co., Buffalo. Shaking Mr. Mertz' hand is Charles Ritz, chairman of the board, International Milling Co., Minneapolis.

AROUND THE TRADE SHOW—A "coffee hour" type of open house was held each afternoon during the Buffalo conference by the Strong-Scott Manufacturing Co., Minneapolis. In the illustration at the left above, Mrs. Eustace Orvis and Mr. Orvis take charge of the coffee pouring and refreshments for some of the ladies returning from a visit to Niagara Falls. At the right are Mrs. Ernst Auer of MIAG Northamerica, Inc., Minneapolis, and Mrs. Robert R. Brotherton, Bay State Milling Co., Winona, Minn. (Center) Robert S. Whiteside, president of Sterwin Chemicals, New York, and Dr. J. K. Krum of that firm test some of the equipment at the Westinghouse booth. (Right) E. P. Farrell, Kansas State College, and Max R. Springer of the Day Sales Co.

AOM-USDA Making Study Of Wheat Conditioning

Wheat conditioning has occupied the attention of the technical committee of the Association of Operative Millers for some considerable time. So little is certain about this complex subject that a plan of action was designed so that all current knowledge could be brought together. AOM is cooperating with the Northern Utilization Research and Development Division of the U.S. Department of Agriculture's Agricultural Research Service at Peoria, Ill.

Dr. Majel MacMasters told the AOM technical conference that good progress is being made on the survey of literature available on tempering and conditioning. So far 800 references have been collected and more are coming in. Many are in foreign languages and the work of translation is proceeding. Much remains to be done, however, for translation is a slow process.

In connection with translation, Dr. MacMasters detailed some of the problems which were being met. In many cases, foreign milling terms are not covered by any available dictionaries and a considerable knowledge of milling is required for the translation. The work has been made more complex because of the European practice of publishing the same material, in different languages, in a variety of journals. Some papers make definite statements; others are not so definite.

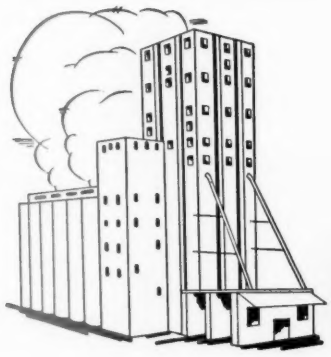
A few articles have been found that give actual figures for changes in power consumption resulting from conditioning. Only a few articles have been found that compare power consumption, flour extraction and baking characteristics obtained following conditioning at different moisture levels and temperatures. Some experiments. Dr. MacMasters reports, have been carried out to determine moisture distribution in conditioned kernels, but she felt that there was a broad opportunity for further work in the field, as well as for a study of the changes in the physical properties of the endosperm as affected by moisture distribution.

Dr. MacMasters warned that it is already evident that all data on conditioning will have to be treated with caution in its application to American wheats and American milling. Most of the work on conditioning has been carried out on European wheats or on mixtures of hard wheats imported into Europe. She found a considerable difference in conditions required for hot conditioning not only different classes of wheat, but also wheats of the same class yet of different origin. This may reflect either differences of climate or variety.

Dr. MacMasters expressed the opinion that conditioning for the improvement of milling may be different from conditioning for the improvement of baking quality.

Summarizing the work, Dr. MacMasters said that she expects that a complete bibliography will be prepared and made available, together with a summary of existing authoritative information and views on conditioning.

Looking to the future, Dr. MacMasters said that further laboratory investigations are contemplated. The first phase may be a study of water distribution within the endosperm after conditioning, and the effect of mode of conditioning upon this distribution.



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What is adequate application? That simply means to use plenty. It spells the difference between merely going through the motions with a light mist and really accomplishing your purpose.

Look, if you're going to use a residual spray, the idea is to kill bugs, not to save spray. You want to lay down enough spray on surfaces so that the residue will keep on killing bugs day after day.

The spray is cheap enough, after dilution. What's expensive is not to use enough while you're at it. And if you're going to all the time and trouble of sweeping and cleaning up in preparation, you ought to give it better than a lick and a promise when you spray.

One big trouble on this score is average sprayer capacity. Fine fog-type mists are okay for flying insects, but they're too dainty for residual work. The particle-size of the droplets is too small for effective deposit on surfaces. What you need is a coarse, drenching spray for wetting surfaces.

So avoid fine fog or vapor producing sprayers. Depending on the amount of area you have to cover, get a sprayer that really puts out. For extensive coverage you should figure capacity in gallons per hour rather than in pints.

Binsecta-Cide is recommended for elevator, flat storage and farm bins; for accessible areas in grain elevators, flour and feed mills, and cereal processing plants. It can be safely used to spray areas over open-top bins. Residue has very low toxicity to man or animals.

$5.55 per gallon in 53-gallon lined drums; $5.70 per gallon in 5-gallon lined drums; both F.O.B., Kansas City. Compare these prices with those of other residual concentrates.

For Information, Write: THE WEEVIL-CIDE COMPANY
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—BREAD IS THE STAFF OF LIFE—

North Dakota College Cereal Lab Has New Malt Mill

A new malt mill, purchased with funds provided by the Malting Barley Improvement Assn. and the Malting Barley Research Advisory Committee, is helping the North Dakota Agricultural College department of cereal technology in its malting barley research program.

The new mill, a little larger in size than the homemaker's electric food mixer and slightly similar in general appearance, was manufactured in Western Germany. It is a precision built, slow speed grinder that does its work without heating the grain. Heating reduces the malt activity, and has been a common and generally unavoidable laboratory problem in most grinders.

Since the new mill was installed it has been possible to double the number of samples capable of being processed by the old equipment, reports Dr. R. H. Harris, department head. In addition to being more efficient, the dustfree features of the mill improve the working conditions of the laboratory.

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Influence of Roll Settings on Quality And Ash Content of Break Releases

By E. Anders and K. Feller

For the tests, two wheats were used that differed in structure (see Table 1). One was a European wheat (a German winter wheat) and the other was imported (Manitoba 4). The wheats were cleaned in the usual manner. The European wheat had a moisture content of 16.6% and was therefore not damped before milling: The Manitoba wheat was damped and allowed to lie for a conditioning period of 16 hours.

TABLE 1—Characteristics of the Wheats Tested

Test	European wheat	Imported wheat
Moisture content, % ...	16.6	16.3
Ash content, %	1.91	1.78
Vitreous endosperm ...	24%	64%

The milling tests were carried out in two series.

Series 1—Break Releases

The European wheat was milled through five breaks and the imported wheat through four. There were no scratch or reduction passages. After each break the percentage yield of overtails, coarse and fine semolina, dunst and flour was determined, as was the ash content of each of these products. The grinding of both wheats was done with each of the four possible flute settings — sharp to sharp, dull to dull, sharp to dull and dull to sharp and the same flute setting was retained for all the break passages in each group of tests.

Series 2—Milling Out of the Flour

The wheats were milled through five and four breaks respectively and through two semolina and eight flour reductions. The different flute settings were arranged as for Series 1. All the reductions were carried out on finely fluted rolls (9.5 flutes per centimeter, or 24 to the inch) with the flutes set sharp to sharp: there was no alteration of flute setting in this instance. Flours of similar extraction were milled—73% for the European and 75% for the Manitoba wheat. The ash content and color value of the finished flours were determined. In all the groups of tests the semolinas were not purified before being sent to the reductions.

In Table 2 are given some technical details that are necessary for the appreciation of the results of the tests. If the technical data seem more or less widely different from those obtaining in a commercial mill, it must be remembered that a laboratory milling plant, which must naturally be limited in size may be called upon to carry out all sorts of tasks. The results of the laboratory tests must therefore be guaranteed to be broadly comparable with the results to be obtained in commercial practice.

All the milling tests were carried out under constant conditions. Particular attention was paid to the maintenance of equal moisture contents, equal feeds and roll settings. Four breaks sufficed for the imported wheat as against five for the European, since the bran of the Manitoba was scraped relatively clean after the fourth break.

RESULTS OF TESTS

In Tables 3 and 4 the results of the first series of tests are assembled. In order to make the picture clearer and to provide a readier comparison the figures for the highest percentage amount of release for each classification (based on the feed to 1st Break) and the lowest ash figures are printed in bold figures. The only exception is the classification "Overtails": the figure stressed here is that of the highest ash content.

When we consider both tables the first thing that strikes us is that the highest percentage amounts of release and the lowest ash contents are concentrated in the columns for the roll settings dull to dull and sharp to dull. This is as true for the European

EDITOR'S NOTE: Mr. Anders and Mr. Feller are members of the staff of the Cereals Research Station at Detmold, Germany. The article is a translation of an article which appeared in Die Muhle, the German trade publication.

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INSIDE SCIENCE

White Flour in the U.S.A.—

Enriched* with Vitamins and Iron for Better Nutrition

by Science Writer

This article is one of a series devoted to the enrichment of family white flour, white bread and rolls, corn meal and grits, macaroni products and white rice.

The enrichment of family white flour with thiamine, riboflavin, niacin and iron by American millers is a major success. It has made great contributions to better health in the United States by improving a staple food.

Since the start of the program in 1941 by millers, voluntarily, the evidence is conclusive that enrichment not only has reduced the number of cases of certain dietary diseases but also is promoting the mental and physical vigor and well-being of the U. S. population generally. Because of its demonstrated value, the principle and practice of enrichment have been applied to other foods made from grains: corn meal and grits, white rice, macaroni, spaghetti, noodles, pastina, farina—and, of course, to white bread and rolls.

Doctors and diet experts have long supported white flour enrichment. The Council on Foods and Nutrition of the American Medical Association and the Food and Nutrition Board of the National Research Council are on record as endorsing the practice.

The legislatures of a majority of the States plus Hawaii and Puerto Rico have enacted laws which make mandatory the enrichment of all family white flour, as well as white bread, sold commercially in those areas.

American homemakers, too, favor foods they know to be enriched—a fact demonstrated by surveys. They look for these words on package labels: "Enriched with vitamins and iron for better nutrition."

What Is Enrichment?

It's an axiom in the milling industry that consumers want beautifully fine, white flour. When wheat is milled and processed to get the white flour which the public demands, vitamin and mineral values are unavoidably lost.

Enrichment restores to white flour the following important vitamin and mineral factors: thiamine, riboflavin, niacin and iron. Calcium also may be added as an optional ingredient. The process is simple and inexpensive. A mixture of the vitamins and iron is fed into the flour stream during processing. This insures that the enriching ingredients are spread evenly throughout the flour.

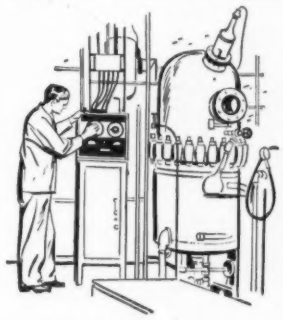
The U. S. Food and Drug Administration has established standards which white flour must meet to be properly labeled enriched. The requirements, in milligrams per pound, are:

	Min.	*Max.*
Thiamine (vitamin B_1)	2.0	2.5
Riboflavin (vitamin B_2)	1.2	1.5
Niacin (another "B" vitamin)	16.0	20.0
Iron	13.0	16.5

(In Canada, too, the same standards have been set for enriched white flour through the amendment of the Food and Drugs Act.)

Vitamins Are Made

The science of chemistry is so advanced these days that many of Nature's complex substances can be "duplicated" in the laboratory. This has happened with many vitamins. First, the chemical composition is learned. Second, the pure substance is isolated. Third, a "duplicate" is made by synthesis. And fourth, the laboratory techniques are extended to large scale operation.



The manufactured "duplicate" is identical chemically and in biological activity with Nature's own product. A vitamin is still a vitamin regardless of its source. So efficient is large scale manufacturing that vitamins are sold at a lower cost than if they were extracted from natural sources.

The Hoffmann-La Roche people make top quality vitamins actually by the tons. To do this they use amazingly complex processes with scientific production controls and the latest equipment which fill buildings each a city block square and many stories high.

Reprints of this article, and all others in this series are available without charge. Please send your request to the Vitamin Division, Hoffmann-La Roche Inc., Nutley 10, New Jersey. In Canada: Hoffmann-La Roche Ltd., 286 St. Paul Street, West; Montreal, Quebec.

The watermills are gone. Today's needs require today's methods. How sensible it is that millers across the nation restore health-giving vitamins and minerals through enrichment.

*Webster's Merriam Collegiate Dictionary includes this definition of "enrich": "to improve (a food) in nutritive value by addition in processing of vitamins and minerals".

wheat as it is for the Manitoba. The setting sharp to sharp, indeed, seems to be superior to the others because of its higher production of semolina on the first and second breaks, but on the other hand in the tests on the European wheat it shows the highest bran ash contents for nearly all the break products. In the tests on imported wheat, too, a number of the highest ash figures are to be found in the column for the setting sharp to sharp.

As far as the ash content of the break products is concerned, in the above tests the roll setting sharp to dull is shown as the most favorable for both wheats. With this setting the highest quantities of release stock, with the lowest ash contents, were produced from both European and imported wheats. In addition, in the column under this heading there is not one single highest ash figure.

It does not appear necessary to go into further details in this case. The figures in Tables 3 and 4 will provide interested readers with several interesting pointers to more profitable combinations of roll settings. At this point, however, we should remind readers that, like the results of all the other milling tests that have been carried out at our institute, the results of these tests cannot be carried over directly into practical milling. They do, however, offer information and indicative figures that are helpful for the practical miller. This is most particularly true as far as the choice of roll flute settings for the commercial mill is concerned.

Second Series of Tests

The results of the second series of tests are to be seen in Table 5. As we have already mentioned, finished flours of 73% and 75% extraction were milled. The changes of roll flute setting were made only for the breaks. The reductions of the unpurified semolinas and dunsts from the break stocks were carried out on the reduction side of our laboratory roller mill, fitted with finely fluted rolls (9.5 per centimeter, or 24 to the inch) running sharp to sharp. For technical reasons we had to forego changing the roll settings for the reductions.

The ash content and the color value of the finished flours were measured, the color value with the Zeiss ball reflectometer (Kugelreflektometer). Color values expressed by this instrument range from the highest (100%) —pure white—to 0% (black). As in the tests on the break stocks the superiority of the roll settings dull to dull and sharp to dull comes out very clearly. Although they were only used on the breaks, they exercise a decisive influence on the quality of the finished flours right through the reductions. The ash content of the flour—from both European and Manitoba wheats —is significantly lower with the break rolls running dull to dull than it is with them set sharp to sharp. In addition, the flours milled with the break rolls running dull to dull were considerably lighter in color than those milled on break rolls running sharp to sharp. The difference in color value between the flours produced by the two settings is particularly great for the Canadian wheat. The results from the setting sharp to dull are not much more unfavorable. They, too, show a significant superiority over those from the setting sharp to sharp.

Conclusions

Comparative laboratory milling tests were carried out with different roll flute settings on the breaks. In the tests, the roll settings dull to dull and sharp to dull gave far and away the most favorable results as far as quantity and ash content of break releases and ash content and color value of finished flours of the same extraction were concerned. The roll setting sharp to sharp showed itself to be inferior to the two settings named above in the majority of cases in the tests, as did the setting dull to sharp, though not to the same extent.

The milling tests show unequivocal-

TABLE 2—Technical Data

Passage	Flutes per cm	Flute spiral %	Differential	Roll setting in mm European	Roll setting in mm Manitoba
I Bk	6.5	8	1:2.5	0.8	0.8
II Bk	6.5	8	1-2.5	0.4	0.3
III Bk	8.0	10	1-2.5	0.2	0.1
IV Bk	9.5	10	1-2.65	0.1	lightly touching
V Bk	9.5	10	1-2.65	lightly touching	

TABLE 3—European Wheat—Results of the Break Tests—Roll Settings

	Sharp to sharp Release %	Sharp to sharp Ash content %	Dull to dull Release %	Dull to dull Ash content %	Sharp to dull Release %	Sharp to dull Ash content %	Dull to sharp Release %	Dull to sharp Ash content %
I Break								
Overtails	66.0	2.36	72.5	2.28	75.4	2.21	72.5	2.31
Coarse semolina	13.8	1.51	10.1	1.35	9.7	1.42	9.5	1.44
Fine semolina	10.2	0.91	8.7	0.84	7.3	0.79	8.8	0.88
Dunst	2.6	0.72	2.3	0.72	2.0	0.65	2.3	0.73
Flour	7.4	0.64	6.4	0.67	5.6	0.61	6.9	0.67
II Break								
Overtails	35.6	3.33	43.6	3.26	48.7	2.79	42.8	3.23
Coarse semolina	13.2	1.63	9.3	1.47	11.1	1.21	9.6	1.51
Fine semolina	9.8	0.78	10.7	0.60	8.5	0.65	10.5	0.68
Dunst	2.0	0.68	2.2	0.56	1.8	0.58	2.4	0.66
Flour	5.4	0.64	6.7	0.59	5.2	0.60	7.2	0.62
III Break								
Overtails	19.2	4.74	27.0	4.47	29.8	3.99	25.4	4.63
Coarse semolina	5.3	3.49	3.3	3.58	5.8	2.39	3.9	3.45
Fine semolina	6.3	0.88	6.0	0.77	6.8	0.68	6.4	0.84
Dunst	1.3	0.67	1.9	0.57	1.6	0.55	1.8	0.65
Flour	3.5	0.64	5.4	0.54	4.6	0.56	5.2	0.60
IV Break								
Overtails	13.8	6.21	21.1	5.53	20.5	5.35	19.9	5.45
Coarse semolina / Fine semolina / Dunst	3.1	2.80	2.5	2.92	5.2	2.04	2.1	1.97
Flour	2.3	1.45	3.3	1.37	4.1	1.12	3.4	0.78
V Break								
Overtails	9.2	7.11	16.2	6.61	14.9	6.43	14.8	6.45
Semos and dunst	3.0	4.46	2.5	3.60	3.2	2.94	2.4	3.63
Flour	1.6	1.28	2.4	1.01	2.4	0.93	2.7	0.84

TABLE 4—Imported Wheat—Results of the Break Tests—Roll Settings

	Sharp to sharp Release %	Sharp to sharp Ash content %	Dull to dull Release %	Dull to dull Ash content %	Sharp to dull Release %	Sharp to dull Ash content %	Dull to sharp Release %	Dull to sharp Ash content %
I Break								
Overtails	73.1	1.89	73.1	2.01	78.8	1.93	75.6	1.88
Coarse semolina	13.3	1.46	13.5	1.09	10.1	1.33	10.6	1.20
Fine semolina	7.2	1.17	7.3	1.01	6.0	1.07	7.1	1.20
Dunst	1.7	1.01	1.6	0.95	1.3	0.90	1.7	1.09
Flour	4.7	0.89	4.5	0.83	3.8	0.78	5.0	0.91
II Break								
Overtails	28.6	3.15	28.1	3.83	39.7	2.80	32.8	3.35
Coarse semolina	25.5	1.32	16.7	1.37	21.3	1.14	20.2	1.28
Fine semolina	13.4	0.89	19.6	0.61	11.4	0.72	14.6	0.75
Dunst	1.7	0.91	2.6	0.64	1.9	0.72	2.4	0.80
Flour	3.5	0.90	6.1	0.69	4.6	0.73	5.6	0.86
III Break								
Overtails	11.6	4.74	14.1	5.50	18.7	4.37	14.5	5.02
Coarse semolina	6.7	3.37	3.6	4.66	8.5	2.47	5.2	3.70
Fine semolina	7.2	1.07	4.8	1.38	7.9	0.82	8.0	1.02
Dunst	1.0	0.94	1.7	0.73	1.4	0.70	1.5	0.82
Flour	2.0	0.98	3.9	0.69	3.2	0.73	3.6	0.82
IV Break								
Overtails	7.1	6.32	10.1	6.43	10.2	5.96	11.0	6.15
Semos and dunst	3.0	3.10	1.7	3.90	5.5	2.70	1.8	3.21
Flour	1.4	1.42	2.3	1.22	3.0	1.30	1.7	1.31

TABL7 5—European and Imported Wheat—Characteristics of the Finished Flours—Break Roll Setting

	Sharp to sharp	Dull to dull	Sharp to dull	Dull to sharp
European wheat flour				
Moisture content, %	16.6	16.4	16.2	16.4
Ash content, %	0.85	0.75	0.76	0.76
Extraction, %	73.0	73.0	73.0	73.0
Color value, %	80.8	82.2	81.9	81.1
Imported wheat flour				
Moisture content, %	16.0	15.7	15.7	15.7
Ash content, %	0.86	0.69	0.70	0.77
Extraction, %	75.0	75.0	75.0	75.0
Color value, %	73.5	79.3	78.6	78.0

ENTOLETER® NEWS

ENTOLETER DIVISION • Safety Industries, Inc. New Haven 4, Connecticut

Vol. 1, No. 1 May 1957

"Entoleter" New CentriMil SERIES 40 NOW AVAILABLE TO MILLERS

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ly that the theoretical and speculative opinions on the process of particle size reduction in the grinding gap, that we meet from time to time in the literature on the subject, can lead to deceptive conclusions. The results of this first set of systematic tests that we have carried out show clearly that it is not practical to stick firmly to a belief, probably passed on earlier, in a particular roll setting—sharp to sharp, for example—although this quite often happens in practice.

Through the use of the most favorable roll settings for individual break passages, it is possible to derive some advantages in milling that are not always made the most of. There is very little risk of doing the mill any harm, since rolls can be changed relatively quickly without any trouble worth speaking of, and the effects can easily be determined from its application to one break roller mill.

In the same context as our tests there are many other factors to be investigated that have more or less decisive influences on the work that is done in the grinding gap of a roller mill. It seems quite amazing that in the field of flour milling so few experiments have been carried out or published on the subject of the optimum conditions for good grinding results. There is probably quite a lot of leeway to make up on this score. The tests and investigations that we have described above, although they cannot lay claim to being complete, have been made like the common efforts of us all, in an attempt to increase the profitability of milling and to further the industry's technical progress.

—BREAD IS THE STAFF OF LIFE—

ELEVATOR OPEN HOUSE

LARNED, KANSAS—Open house was held May 1 at the Stafford County Flour Mills elevator here. The occasion was the 20th anniversary of the mills in Larned.

COTTON BAGS NEEDED IN KOREA

SAN ANTONIO, TEXAS—Clean cotton bags or print bags are in great need in Korea for making clothes for thousands of girls and women, states an appeal from that country made through Ira D. Armstrong, Liberty Mills, San Antonio, Texas. The appeal originated from W. Bassett Orr, former secretary-treasurer of the Texas Grain & Feed Dealers Assn., now U.S. director of overseas relief for Korea. Mr. Orr wrote Mr. Armstrong that thousands of little Korean girls are in orphanages without clothes to wear, and millions of people are underdressed and underfed. There is a dire need for dress material such as clean cotton bags. Those wishing to make a contribution may reach Mr. Armstrong at 496 Broadview Drive-W, San Antonio 1, Texas, or call him at CA 7-9121, San Antonio.

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Milling Division Modernizes

Two years ago the milling division of Doughboy Industries, Inc., at New Richmond, Wis., was faced with a decision familiar to many in these competitive days: Invest in a program of modernization and streamlined efficiency, or close up.

E. J. Cashman, president, and his management personnel took inventory of assets. Doughboy's prestige and reputation for quality milling dated back 100 years. Although 38 years old, its sturdy mill stood up to many in operation today. Its veteran millers were among the best in the business, some having served continuously with Doughboy since even before the present building was erected in 1917. The future demand for quality semolinas and other industrial flours looked promising, and management was capably experienced in both production and marketing. The sum total of the above tipped the scales in favor of modernization.

Thus, Doughboy made plans for complete remodeling. Ray Wentzel, vice president, called in milling engineers from milling machinery companies. Plans were laid for the purchase of new Buhler Brothers equipment and for the remodeling of some existing equipment. All new sifters and steel purifiers were moved in. All new metal spouting was installed. Wheat washing equipment, other cleaning machinery, and some pneumatic equipment was installed.

The extensive revamping took several months, and involved operations on every floor.

Today, Doughboy's milling division, which began with a modest waterwheel operation in 1856 and which was twice destroyed, is ready to begin another century of quality milling. And this emphasis on quality, combined with maximum production efficiency, is already reflecting a climbing sales curve, rewarding the firm's decision to "go modern," company officials said.

DO YOU REMEMBER?

IN 1909 PEARY REACHED THE POLE

On April 6, 1909, Admiral Robert E. Peary "nailed the Stars and Stripes on the pole," as he wrote at the time.

It was a momentous event which paved the way for further Arctic exploration which added much scientific data to polar knowledge.

50 YEARS AGO . . . two years before Peary reached the pole, the Swiss Silk Bolting Cloth Manufacturing Company Limited was incorporated to further insure the highest possible quality attainable, and to carry on the friendship with American millers which began back in 1834, and which has grown with great satisfaction since that time.

Swiss silk enjoys a fine reputation today, for a firm so reliable, and a product so fine as to give such outstanding service, has to be good.

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Latest Quality Data On Dakota Durums

By RAE H. HARRIS and L. D. SIBBITT

This report discusses the quality of four comparatively new durum wheat varieties grown for three years in experiment station plots at various locations in North Dakota.

Three other varieties, Mindum, Sentry and Vernum, which had been grown extensively before the advent of 15B stem rust, are used as standards with which to compare the new wheats.

Table I shows the yield per acre and some of the quality data from the wheats. As previously reported in 1956, Langdon had the highest yield per acre, with Ramsey next highest. Mindum was the lowest with the remaining four varieties giving intermediate yields. For test weight, Towner was again the highest, followed by Ramsey. All the remaining varieties except Mindum were above 60 pounds. Mindum was also definitely lower than the others in both wheat and semolina protein content, while Yuma was the highest, as found before. For semolina yield, Mindum was the lowest with Ramsey and Langdon the highest. The remaining varieties were more or less intermediate in semolina yield.

Table II shows additional quality data obtained from the semolina. For ash content all the varieties were quite similar, except Ramsey and Mindum which were slightly higher than the others. Little differences were obtained among the varieties in speck count, with the exception of Yuma, which had distinctly less speckiness than the other semolinas. Low speck count is desirable.

Water absorption was very similar for all the varieties. Yuma and Vernum, however, were slightly higher than the others. For the 1956 crop samples, a tentative absorption was pre-determined by the Farinograph before mixing the dough for processing instead of using as an indication of absorption the plasticity of the dough as obtained at the mixer. This new method offers some advantages over the alternative procedure and has proved helpful in furnishing an objective value. Further work with the Farinograph absorption determination is planned. The macaroni visual color score is discussed in the following paragraph.

Figure 1 represents the average macaroni color score of the seven durum varieties grown for three years in North Dakota. Langdon and Sentry yielded the best results,

EDITOR'S NOTE: Mr. Harris is a cereal technologist and Mr. Sibbitt is an assistant cereal technologist at the North Dakota Agricultural Experiment Station at Fargo.

TABLE 1—Wheat Quality Values for Seven Durum Varieties (Nine Replicates)

Variety	Yield b.p.a.	Test weight lb./bu.	Approx. vitreous kernels %	Protein* Wheat %	Protein* Semolina %	Semolina yield* Unpurified %	Semolina yield* Purified %
Langdon	37.9	61.7	88	13.7	12.6	72.5	58.3
Sentry	32.6	61.3	86	14.2	13.2	70.9	56.3
Ramsey	36.2	62.2	90	13.5	12.6	72.6	58.0
Mindum	27.1	59.8	87	12.2	11.4	68.2	54.5
Vernum	30.5	60.6	87	13.6	12.6	69.3	55.4
Yuma	32.7	60.1	91	14.6	13.4	71.4	57.0
Towner	31.9	63.0	92	13.7	12.6	70.8	55.1

*Expressed on 13.5% moisture basis.

TABLE 2—Semolina and Macaroni Quality for Seven Durum Varieties (Nine Replicates)

Variety	Ash content* %	Semolina specks per 10 sq. in.	Absorption* %	Visual color score of macaroni	Mixing pattern
Langdon	0.60	34	28.0	8.9	Weak
Sentry	0.61	46	28.1	8.9	Very weak
Ramsey	0.64	32	28.0	8.0	Medium weak
Mindum	0.64	26	28.4	7.9	Medium strong
Vernum	0.62	39	28.6	7.9	Medium strong
Yuma	0.61	16	28.8	7.8	Strong
Towner	0.59	30	28.3	7.2	Weak

*Expressed on 13.5% moisture basis.

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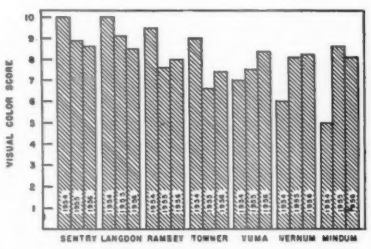

FIGURE 1—Visual macaroni color score of the seven varieties.

while Ramsey, Mindum, Vernum and Yuma were definitely lower and quite similar to each other. Towner was the lowest in color as reported before. Yuma commonly shows a reddish tinge in the macaroni and has been occasionally faulted by the industry for this reason. However, a reddish tinge is less objectionable than a grayish or pale hue.

The effect of year of growth on the macaroni color of the seven varieties is shown in Fig. 2. These data provide information on the differences in macaroni color which may be expected in different years in this state. For Sentry and Langdon, color decreased consistently from 1954 to 1956. Ramsey and Towner had the best color in 1954, while Yuma showed an improvement from 1954 through 1956. Vernum and Mindum were significantly low in 1954, probably because of stem rust 15B infection.

The physical dough properties of durum varieties are becoming more important with the increase in automatic macaroni processing in industry. Weak, sticky doughs are not desirable and future breeding programs are planned to develop stronger gluten characteristics. Gluten properties can be determined in several ways, such as separating the gluten from the starch in semolina by "washing" and then examining its elasticity and ability to stretch. Or chemical treatment may be used to detect the swelling or absorption of water by different wheat glutens. However, use of standardized and largely automatic apparatus for testing gluten quality through measurement of the physical properties of dough offers some distinct advantages.

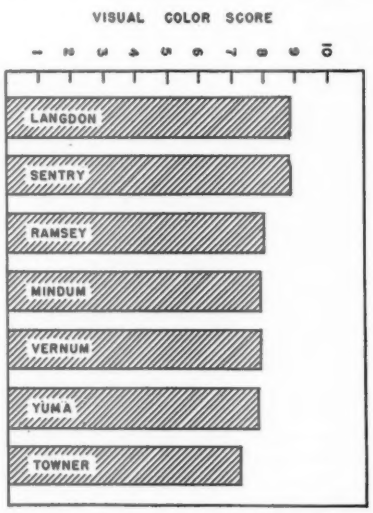

FIGURE 2—Yearly variation in macaroni visual color score of the seven varieties.

Figure 3 shows the dough properties of the seven durum varieties as represented by the changes occurring during mixing the doughs, using semolina and distilled water, and the extensibility of the dough after optimum mixing. For the extensograms 1% of sodium chloride was added. The mixogram and farinogram curves are arranged approximately in decreasing order of strength from left to right. Thus Yuma would be ranked as the strongest in mixing and gluten strength, while Sentry would be weakest.

Several chemists connected with the durum processing industry have observed that Yuma has a short and tough gluten which is not quite as satisfactory as the other varieties. Sentry gluten tends to be slightly sticky, but this variety has been well accepted by industry. Its mixing curves show evidence of weakness to the experienced observer, especially the farinogram. The extensograms confirm the conclusions reached from the mixing curves, and emphasize the different gluten properties of Yuma shown by the exaggerated height of the curve, while Sentry had the lowest curve height.

Curve height indicates the resistance of the dough to stretching, and shows that Yuma had the strongest dough, and Sentry the softest or weakest. The other wheats were intermediate between the two extremes.

From the overall quality standpoint Langdon appears to be the best durum variety in these comparisons. While Sentry is equal in macaroni color it does not have as satisfactory semolina dough properties as Langdon. Yuma is probably the least satisfactory in quality of the seven varieties discussed in this report.

It is planned later to publish information on the relative cooking quality of these durum wheats. This work is not completed at the present time.

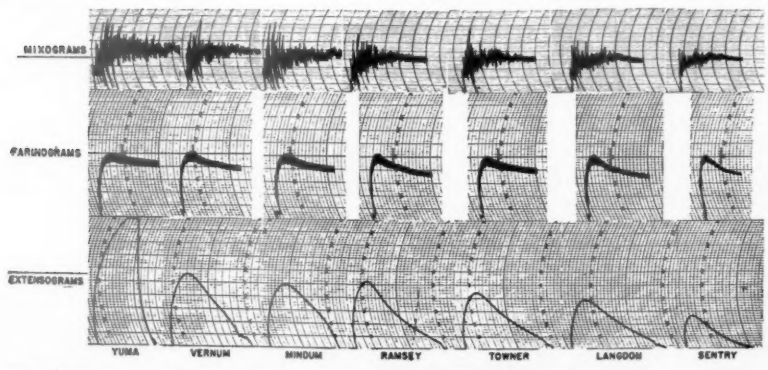

FIGURE 3—Mixogram, farinogram and extensogram patterns obtained from the varieties arranged in general order of decreasing strength from left to right.

—BREAD IS THE STAFF OF LIFE—

RYE MOVEMENT

WINNIPEG — The export movement of rye from Canada remains small and March clearances of 146,000 bu. only increased the total from Aug. 1 last year to 1,935,000 bu. This included 981,000 bu. for the U.S.; 742,000 for Germany, and 125,000 bu. for the U.K. The only other destination was Belgium.

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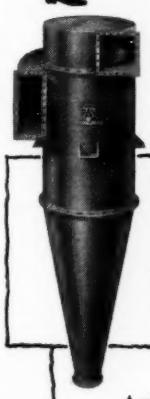

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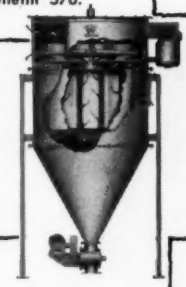

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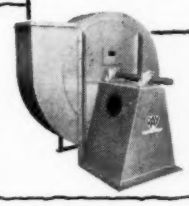

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Classification of Flour Excites Interest at AOM Conference

Complementary to the announcement by Pillsbury Mills, Inc., of its new process described as a two-part operation consisting of "turbo grinding" and "turbo separation" at the technical conference of the Association of Operative Millers, were three other papers on a similar theme.

The speakers were W. H. Kretz of the Sharples Corp., Philadelphia, Pa.; Robert J. Hoskins, Safety Industries, Inc., New Haven, Conn., and Ernst Auer, MIAG Northamerica, Inc., Minneapolis.

Sharples Corp.

Mr. Kretz told the technologists that interest in the sizing and classification of flour and other fine powders has grown considerably in recent years. Besides flour milling, he cited the chemical, ceramics and mining industries in this connection.

The technical men, interested in finding improved ways of physically sizing particles, have recognized that particle size distribution affects both chemical and blending properties. For this reason, equipment for improving the air classification of fine stocks has been developed. Sharples, after protracted research, decided that the air vortex principle provided the greatest potential for the classification of fines.

That principle, Mr. Kretz explained, is quite simple. "The vortex classifier is one in which the particles are separated by the difference in forces between centrifugal force and drag force. Larger particles, due to their high centrifugal force, are accelerated toward the outside of the classifier. The finer particles, on which the drag force is greater, are taken out in an airstream. The optimum design of this type of classifier would be reached when all particles of the same size are subjected to the same forces everywhere in the classifier."

Mr. Kretz reported that the first Sharples machine developed was the micromerograph, an instrument designed to give an analysis of particle size distribution. Thereafter the Sharples Super classifier came along and it had a great sharpness of separation point.

The results obtained on a machine with a capacity of 1 ton an hour could be duplicated on a 10 ton unit. Particles are introduced into the classifier through a feed system which includes accelerating veins, feed channels and nozzles for the injection of the product.

The separation point, Mr. Kretz indicated, is changeable on a material such as flour between a range of about 15 to 85 microns. In a flour having a distribution of particle size between 2 and 100 microns, it is possible to remove as little as 5% or as much as 95% of the feed material as a fine fraction.

Safety Industries, Inc.

Mr. Hoskins reviewed the progress made by his firm in the development of the Entoleter Centri Mill, series 40 in. Describing the design of this impact mill, he said that the unit is belt driven and will take up to 150 h.p.

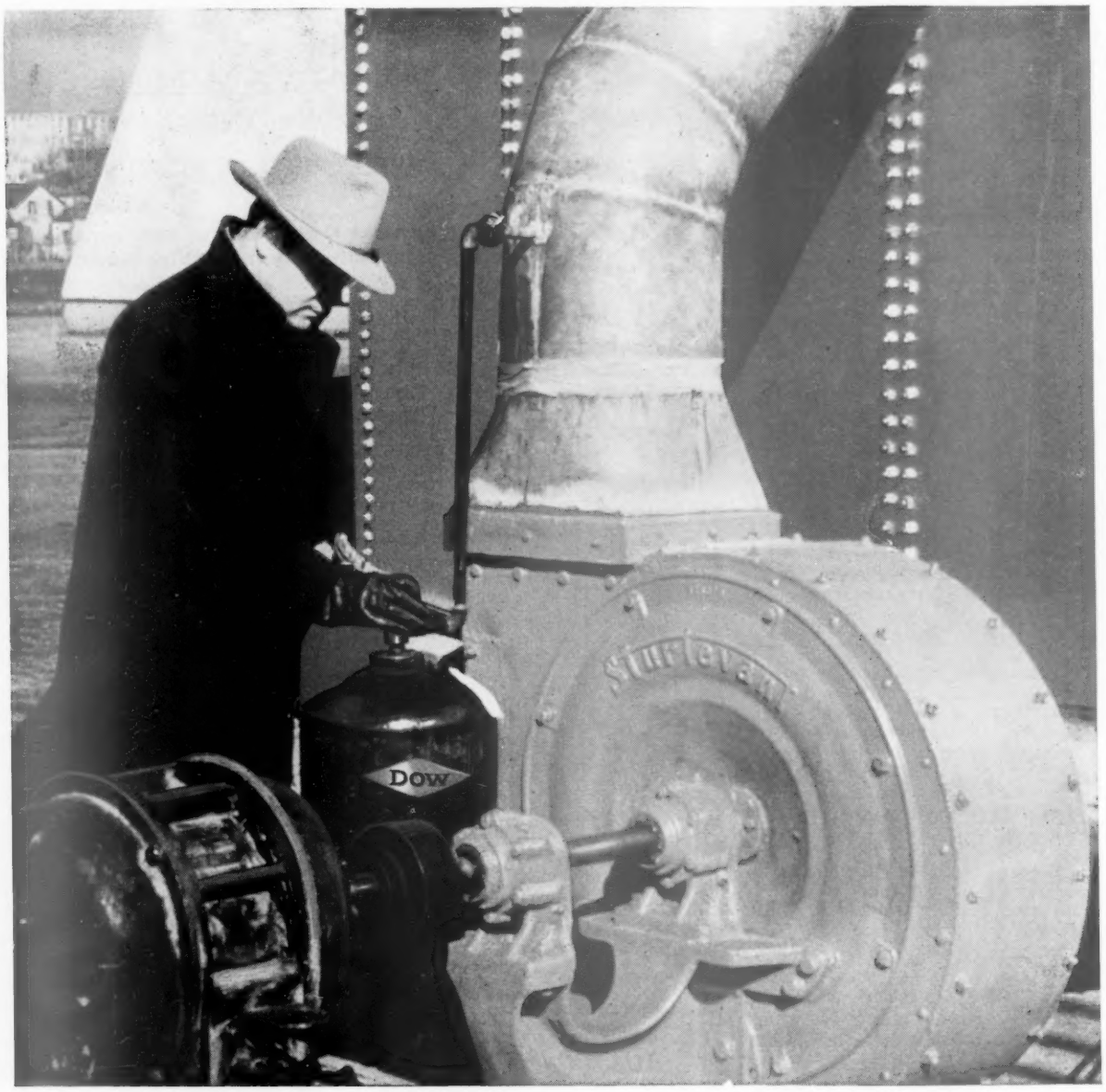
Dealing with secondary reductions in particle size of both hard and soft wheat flours for various purposes, Mr. Hoskins explained that, in the production of soft wheat flour, it is often desirable to reduce the flour to a very low micron size, following the treatment with classification and eliminating the smaller micron portion in order to make an extremely low protein cake flour.

Using slides to illustrate his points, Mr. Hoskins stressed the indication presented that the flour had not had excessive starch granule breakage but that the proteinaceous material had been freed from the starch granules and that the flour would be in proper condition for classification. Further illustrations brought out the possibility of milling and bolting with relatively coarse cloth and treating the finished flour by high velocity impact in order to secure the desired granulation.

Mr. Hoskins revealed that Safety Industries, Inc., is proceeding with its development. Currently under test is a new rotor liner combination and already it is apparent that even more reduction can be obtained.

MIAG Northamerica

Mr. Auer, speaking on the "Walther Air Classifier," said that recent research and particle size distribution in wheat flour has showed that the various groups of particles de-



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pending on their size have different qualities.

The fraction with very fine particles of the wheat flour has a considerably higher protein content than the fraction of medium sized particles which is rather low in protein. It is therefore desirable, Mr. Auer pointed out, to separate these groups and to produce flour products with various characteristics. He pointed out that the particle size fractions he mentioned are below approximately 66 microns which is equivalent to the mesh silk No. 20 or even finer or U.S. Standards sieve series No. 230.

Mr. Auer said the making of a separation according to particle size in this range is rather difficult and "the efficiency of sifters with bolting cloth or stainless steel cloth drops to an impractical and uneconomical point. A separation below the maximum point is the spot at which the air classifier comes into the picture," he said.

Mr. Auer listed the requirements for air classifiers as:

- The classifier has to be controllable to separate at each desirable particle size within the possible and practical limits.
- The separation by the classifier has to be accurate: That means a fine fraction made at 30 microns, for example, should contain only a minimum of particles larger than 30 microns and the coarse fraction should contain only a minimum of fine particles.
- The flour should not be exposed to other influences such as excessive temperatures since the quality of the products will be influenced.
- The classifier should be mechanically reliable and should require only a minimum of maintenance and a minimum of power consumption.

Mr. Auer was of the opinion that all of those requirements are fulfilled by the Walther Air Classifier. He described the method by which the mixture of flour and air is separated by centrifugal forces ranging up to 10,000 times the force of gravity. Mr. Auer said that the most practical method, according to his research, in controlling the fractionating point is the addition of secondary air into the sifting chamber.

He mentioned that laboratory size air classifiers and production models ranging in capacity from 50 lb. per hour to 3,500 lb. per hour are available. The laboratory model has 1 h.p. power consumption and the 35-sack model 19 horsepower. He mentioned that the classifier is supplied with feeders, discharge air locks and air pumps, but minus the electrical motors.

—BREAD IS THE STAFF OF LIFE—

COMPANY INCORPORATES

CLAY CENTER, NEB.—The D and S Grain Co. here, a general grain merchandising business, has been incorporated with an authorized capitalization of $250,000.

Laboratory Test Can Now Determine Grain Soundness

A simple laboratory test taking only 10 minutes to perform can now determine the relative soundness of a lot of grain. It may also be used as an index of storage potential if the moisture content of the grain is known.

According to M. H. Neustadt, Doris Baker, and Lawrence Zeleny, research scientists with the Agricultural Marketing Service of the U.S. Department of Agriculture, who developed the new method, tests are based on the free fatty acid content of stored grain.

Fatty acids are the result of chemical breakdowns that occur during deterioration of grain. They are easily measured, even in early stages of spoilage, and lend themselves well to testing procedures.

Fat acidity is defined as the number of milligrams of potassium hydroxide required to neutralize the free fatty acids in 100 grams of dry grain.

For determining fat acidity, researchers developed a grinder-extractor which simultaneously grinds the sample and extracts the fatty acids with benzine in only five minutes. In another five minutes, a technician can complete the determination. Eight such tests can be run in an hour.

The reliability of the fat acidity test has been pointed up in several preliminary studies. These have involved both damaged and sound grain. In almost every case, the amount of fatty acid provided a good indication of the grain's overall quality.

For example, Beltsville chemists

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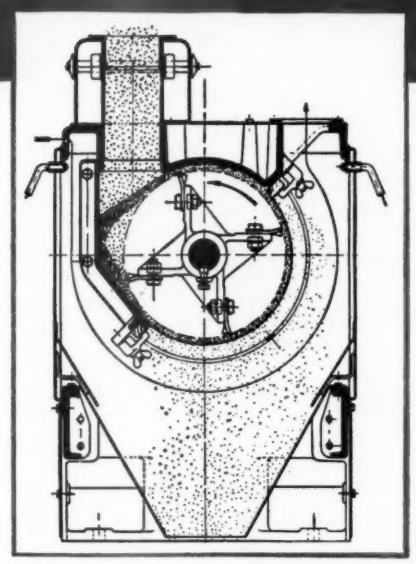

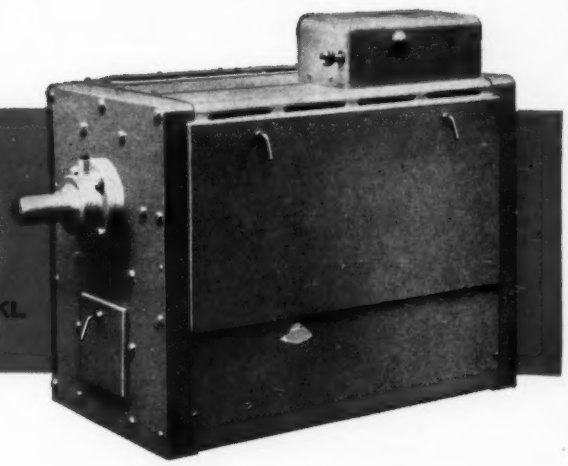

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This is accomplished by a special centrifugal process. A high-speed rotor moves the stock through the machine with a spiral action. To prevent the stock from acquiring the same speed as the rotor, which would almost eliminate the impact action, it is continually thrown against a baffle plate. The loosened flour particles pass through a casing of stainless steel Vibro cloth, or of perforated steel.

A unique inlet regulation controls the length of time the product is exposed to impact action by shortening or lengthening the effective path of the bran through the machine. Any change can be made quickly while the machine is running.

Bran is large and clean after leaving the machine and the flours are very fine and light in color. Since there is no actual rubbing action, power requirements are low.

Impact Finisher MKL also gives excellent results in rye mills.

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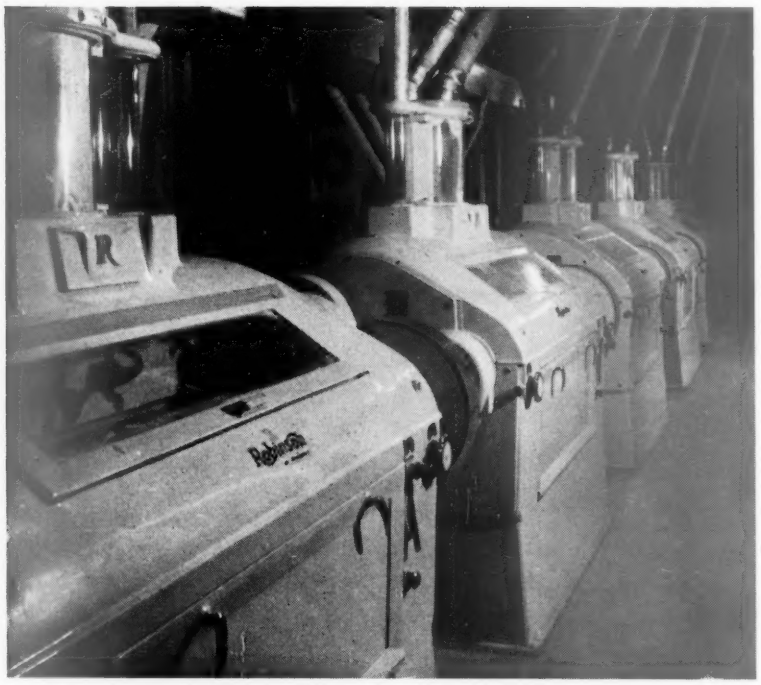

GIVING THE MILLER WHAT HE WANTS

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tested 252 samples of corn classified according to "damaged kernels" and another 209 samples classified according to viability.

The fat acidity increased rapidly with the decreasing commercial grade when "damaged kernels" was the grading factor and with loss of germination properties. Furthermore, these tests showed that fat acidity was an index of the early stages of spoilage.

Preliminary studies also included work with grains of several different degrees and types of damage. This research involved determining the relationship between the degree of damage and fat acidity. Testing personnel obtained particularly good correlations for "sick" wheat, and for corn damaged by blue-eye mold, cob rot, or heat. Also included were wheat with blight, mold and scab, and wheat with frost damage.

Work with freshly harvested sound grain and other related commodities involved establishing fat acidity levels for each particular item. These levels stood as a dividing line. If the fat acidity for a particular type of grain fell above the predetermined limit, it meant the grain showed some deterioration. But if it came within the

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limits of the check, the grain was unquestionably of good quality.

A total of 1205 samples representing the 1951, 1952, and 1953 crops was obtained from agricultural experiment stations in 26 states and the general field headquarters of the grain division. Fat acidity tests were made immediately after the samples were received.

Eleven kinds of grains and related commodities were tested and fat acidity limits established below which the grain was of unquestionable soundness. In some instances, where the number of samples of a particular kind of grain were few, tentative fat acidity limits were set.

Having established the upper limits for sound grain and shown good correlations for some types of damage with fat acidity, the test should be a valuable tool for the grain industry. It gives a clue to the intrinsic quality of the grain which external factors, such as condition and damage, do not always reveal.

The fact that the fatty acid content of stored grain can easily be measured and tested—even by non-scientifically trained persons—adds to its value. Another asset, of course, is that fat acidity, once measured, can be used as an index of storage potential if the moisture content of the grain is also known.

——BREAD IS THE STAFF OF LIFE——

Easing of Storage Problem Expected In USDA Actions

WASHINGTON — The heavy sale of bin site government-owned corn in congested Corn Belt storage areas has passed its peak and arrivals of Commodity Credit Corp. corn at terminal markets will shrink, it is indicated by the U.S. Department of Agriculture.

Within two weeks USDA will have fully completed its movement of corn from bin sites in tight storage areas of Iowa and Illinois. Officials consider USDA's remaining bin site storage stocks in about the best condition in several years, leading to the conclusion that out-of-condition corn sales will be limited in volume.

The expectation is that the corn market may reveal some strengthening as a result of the development.

Drouth area feed certificate redemptions from CCC stocks of corn will continue but probably on a diminished scale as the drouth area shrinks in size. Drouth emergency feed certificates outstanding for redemption are now estimated at about 8 million bushels in terms of corn.

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Better Wheat Products Promised by Studies Of Oregon Wheat

PORTLAND — Better wheat products are promised by research studies currently under way to learn more about the "insides" of a kernel of Oregon's famous soft wheat, the Oregon Wheat Commission has reported.

The commission, which so far has appropriated for basic research more than $100,000 in funds raised by Oregon wheat growers, said scientists working on the problem at several colleges and U.S. Department of Agriculture laboratories already have come up with important findings and are on the track of more.

One important study is seeking to link the chemical properties of soft wheat with the physical properties of doughs and batters. Another group of scientists is taking the protein component of wheat apart—literally bit by bit—to give bakers an exact method of evaluating the baking qualities in different wheat flours.

Several investigations directly concern consumers. Considerable work is being done on methods to retain freshness in bread. Freezing is being studied as one way to delay staling and retain flavor.

Consumer preference studies on white bread show best acceptance of a loaf with 10 cu. in. per ounce, 7% sucrose and 4% non-fat milk solids.

Besides contributing to some projects, the commission also sends members on visits to the several research centers regularly. This is done to keep abreast of latest findings, and also to channel investigations into matters of greatest value to the region's soft wheat industry.

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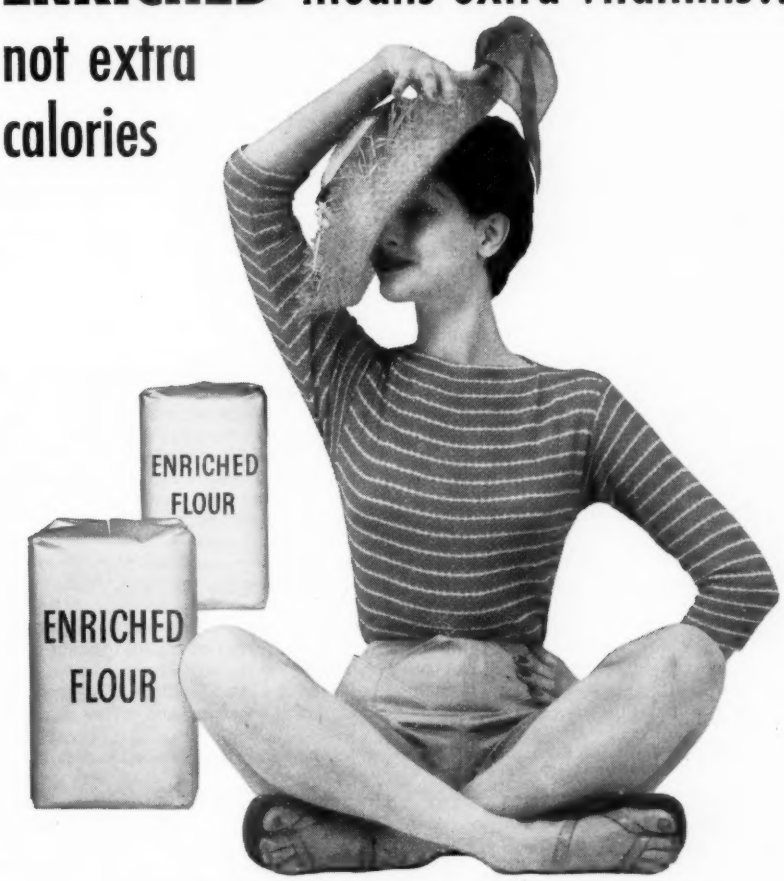

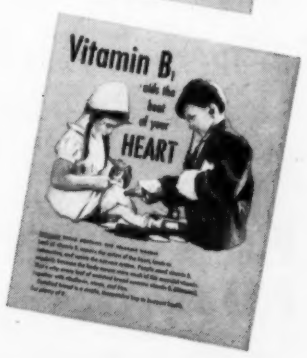

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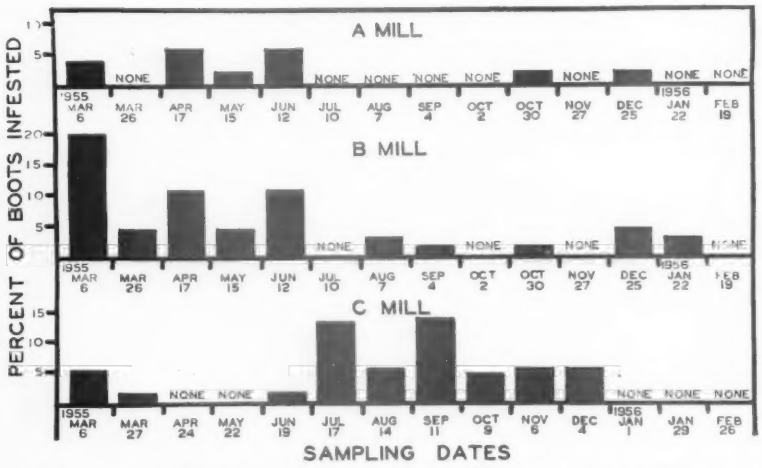

FIGURE 3—Infestation of boots in three mills given spot fumigations, 1955-1956.

FUMIGATION EVALUATION

(Continued from page 1a)

hours for aeration after fumigation. In mills A and B the liquid fumigants were poured first, beginning about 7 a.m., and the methyl bromide was applied starting about 12:30 p.m.

The three mills received one general fumigation with methyl bromide during the period of this study —mills A and B on June 18-19, 1955, and mill C on Dec. 10-11, 1955.

Insect Samples

Two types of insect samples were used to determine the effectiveness of the spot fumigations. At approximately monthly intervals, eight-ounce samples of stock were drawn one week prior to fumigation from each elevator boot and the number and species of both living and dead insects were noted. In addition, test insects confined in eight-ounce salve tins with screened ends were placed in various mill machinery units before each fumigation. These were removed after approximately 21 hours of exposure and the mortality noted. Flour beetle adults and larvae were used.

During the initial fumigation of three mills, representatives of the Dow Chemical Co. took air samples at points of application and areas where fumigants were being applied. The mill atmosphere was also sampled 24 hours after the fumigant was applied. These samples were taken to evaluate the health hazards involved. Air was drawn through a bed of silica gel upon which both methyl bromide and ethylene dibromide were quantitatively adsorbed. These materials were desorbed later in the laboratory, decomposed by heat and the products of decomposition adsorbed in a solution that was titrated for total halide. This method of analysis does not allow for dis-

Table 1.--Number of samples of milling stock infested and insects found, and average for all samples in the three mills.

Date fumigated	Date sampled	Samples infested: Number	Insects found: Number	Average insects for all samples: Number
Mill A - 52 samples				
3/6/55	3/6/55 1/	2	2	0.04
	3/20	0	0	0
3/27	4/17	3	4	0.08
4/24	5/15	1	1	0.02
5/22	6/12	3	6	0.12
6/19	General fumigation, methyl bromide			
	7/10	0	0	0
7/17	8/7	0	0	0
8/14	9/4	0	0	0
9/11	10/2	0	0	0
10/9	10/30	1	1	0.02
11/6	11/27	0	0	0
12/4	12/25	1	1	0.02
1/1/56	1/22/56	0	0	0
1/29	2/19	0	0	0
Mean				0.02
Mill B - 65 samples				
3/6/55	3/6/55 1/	13	21	0.36
	3/20	3	4	0.07
3/27	4/17	7	19	0.36
4/24	5/15	3	3	0.06
5/22	6/12	7	25	0.49
6/19	General fumigation, methyl bromide			
	7/10	0	0	0
7/17	8/7	2	7	0.14
8/14	9/4	1	1	0.02
9/11	10/2	0	0	0
10/9	10/30	1	1	0.02
11/6	11/27	0	0	0
12/4	12/25	3	3	0.06
1/1/56	1/22/56	2	2	0.03
1/29	2/19	0	0	0
Mean				0.12
Mill C - 68 samples				
3/6/55	3/6/55 1/	4	4	0.06
	3/27	1	1	0.02
4/3	4/24	0	0	0
5/1	5/22	0	0	0
5/29	6/19	1	2	0.03
6/26	7/17	9	88 2/	1.42
7/24	8/14	4	7	0.11
8/21	9/11	9	52 3/	0.85
9/18	10/9	3	3	0.05
10/16	11/6	4	10	0.15
11/13	12/4	4	4	0.06
12/11	General fumigation, methyl bromide			
	1/1/56	0	0	0
1/8	1/29	0	0	0
2/5	2/26	0	0	0
Mean				0.20

1/ Samples taken prior to fumigation.
2/ On this date, 76% of the insects found in the samples were taken from the first break boot.
3/ On this date, 58% of the insects found in the samples were taken from the boot handling SA stock. This stock tends to be sticky and hangs up on the sides of the elevators.

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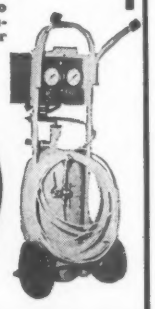

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Table 3.--Overall mortalities of larval and adult test insects exposed in mill machinery units.

Date fumigated	Total insects	Mortality of Adults	Mortality of Larvae
	Number	Percent	Percent
Mill A			
3/6/55	1751	75.8	60.5
3/27	1070	79.2	57.9
4/24	909	71.8	50.4
5/21	1526	57.7	49.4
7/17	2691	61.4	51.8
8/14	2103	66.4	55.7
9/11	2664	62.1	44.6
10/9	2757	59.4	52.3
11/6	2277	52.6	46.3
12/4	2872	43.0	43.0
1/1/56	2403	55.4	45.1
1/29	1629	55.0	46.6
2/26	1399	54.4	48.7
Average		55.0	49.8
Mill B			
3/6/55	2275	74.5	61.5
3/27	1325	80.8	60.4
4/24	1050	71.0	51.0
5/21	1435	54.0	53.2
7/17	2821	65.4	54.6
8/14	2387	66.4	60.7
9/11	2631	56.3	57.0
10/9	2752	64.5	57.1
11/6	2576	63.4	55.5
12/4	2764	51.0	51.1
1/1/56	1986	64.9	54.4
1/29	1588	62.4	59.4
2/26	1422	61.2	53.9
Average		62.8	56.3
Mill C			
3/6/55	2010	57.9	40.6
5/1	1764	56.8	23.9
5/29	1616	49.9	33.2
6/28	2015	32.6	32.4
8/21	2562	60.1	47.4
9/18	2783	64.7	53.4
10/16	2521	46.1	38.7
11/13	3212	68.5	51.7
1/8/56	1596	30.7	21.1
2/5	1450	38.7	31.7
3/3	1497	42.3	34.3
Average		52.0	39.5

crimination between the two bromide compounds composing the fumigant. For this reason the bromide found was used to calculate the concentration in air of both compounds separately, as if the other were not present.

Samples of the flour and feed fractions were taken after each fumigation and the bromide residues determined by the Dow Co. as follows: (1) The first flour obtainable after the mill resumed operation following each fumigation, designated as A, X, and Y grades; (2) flour taken after the mill was "balanced," the flour up to standard and being sent to bulk flour storage, designated as A, X, and Y grades; (3) the first feed reaching the packer bins after the mill resumed operation following each fumigation.

The data obtained from the examinations of the eight-ounce samples of milling stock taken from the elevator boots are given in Table 1. These samples were taken three weeks after each spot fumigation and are an indication of the insect populations developing between fumigation intervals. In mill A a total of 15 insects were found in 13 samplings from 52 locations, in mill B 86 insects from 65 locations, and in mill C 171 insects from 68 locations.

Table 1 also shows the number of boots that were found infested in each mill at every sampling period throughout the year, together with the number of insects found and the average number of insects per boot. The percentages of boots infested at the start of the test and at each sampling period for each mill are shown in diagrammatic form in Fig. 3. The relative efficiency of the three treatments would ordinarily be best compared on the basis of the percentage of elevator boots infested rather than on the total number of insects collected. However, in evaluating the results obtained, several factors

Table 4.--Amount of ethylene dibromide residues present in milling stock samples, based on analysis for organic bromide

Sample No.	Description of sample	Date of analyses: 6/14/55	7/6/55	9/23/55	11/1/55	1/10/56	1/13/56	2/10/56
		P.p.m.	P.p.m.	P.p.m.	P.p.m.	P.p.m.	P.p.m.	P.p.m.
Mill A								
1	A Start-up flour	10.1 1/	156.0	7.0	200.0	120.0	131.0	12.0
2	X Start-up flour		137.0	None	None	141.0 2/	None	304.0 2/
3	Y Start-up flour		139.0	140.0	190.0		170.0	
4	A After flour is approx. on grade	2.3	4.0	66.0	135.0	86.0	48.0	98.0
5	X After flour is approx. on grade	None	3.0	None	None	112.0 2/	None	183.0 2/
6	Y After flour is approx. on grade	20.1	8.0	120.0	168.0		120.0	
7	Bran start-up	13.6	19.0	None	None	None	None	None
Mill B								
8	A Start-up flour	2.2 3/	14.0	24.0	4.0	118.0	11.0	105.0
9	X Start-up flour		8.0	None	5.0	128.0 2/	48.0	215.0 2/
10	Y Start-up flour		41.0	620.0	None		59.0	
11	A After flour is approx. on grade	0.7	1.0	10.0	4.0	9.0	3.4	24.0
12	X After flour is approx. on grade	8.5	2.0	None	2.0	29.0 2/	16.0	26.0 2/
13	Y After flour is approx. on grade	1.6	5.0	48.0	None		5.6	
14	Bran start-up	81.0	3.0	None	None	None	None	None
Mill C								
15	A Start-up flour	47.0	199.0	73.0	165.0	2.0	50.0	45.0	0.5
16	X Start-up flour	None	135.0	228.0	215.0	4.0	70.0	96.0	0.9
17	Y Start-up flour	None	221.0	283.0	134.0	15.0	84.0	200.0	>0.5
18	A After flour is approx. on grade	None	1.2	3.0	3.0	1.0	3.0	13.0	>0.5
19	X After flour is approx. on grade	3.5 2/	5.1	8.0	6.0	3.0	9.0	11.0	0.5
20	Y After flour is approx. on grade		5.5	10.0	10.0	5.0	17.0	66.0	1.0
21	Bran start-up	0.6	None	6.0	67.0	1.0	4.0	177.0	None

1/ A composite of samples A, X, and Y.

2/ A composite of samples X and Y.

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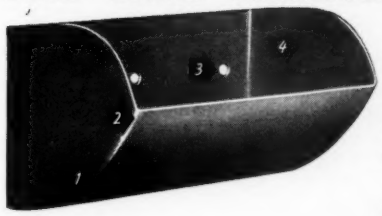

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should be taken into consideration.

As shown by Fig. 3, the percentage of elevator boots infested in mill B was approximately five times as great at the start of the experiment as it was in mill A, and more than three times as great as in mill C. Secondly the mills A and B received a general fumigation in June which apparently eliminated infestation in the boots in those mills. Mill C did not receive a general fumigation until December. Furthermore, mill C did not receive the supplemental treatments of inaccessible units with methyl bromide that were administered in mills A and B. From the start of the test in March, through June, the best control was obtained in mill C. The greater number of infested boots in mill C from July to December was due to the fact that no general fumigation was given in that mill during the summer, and the spot fumigations were not entirely adequate in preventing an increase in the number of infested boots during this critical period.

It is evident that the treatment given mill A was slightly more effective than that given in mill B; however, neither treatment was completely effective in holding the insect population down from March to June, and if these two mills had not received a general fumigation in June the number of infested boots would doubtless have increased to much larger proportions during the summer.

Table 2.--Mortality of test insects exposed in mill machinery units fumigated with spot fumigants.

Location of samples	Mills A and B: Date fumigated	Mortality in Mill A: Adults	Mortality in Mill A: Larvae	Mortality in Mill B: Adults	Mortality in Mill B: Larvae	Mill C: Date fumigated	Mill C Mortality: Adults	Mill C Mortality: Larvae
	1955	Percent	Percent	Percent	Percent	1955	Percent	Percent
Boots	3/6	100.0	100.0	100.0	100.0	3/6	94.9	87.0
Rolls, feed hopper	3/6	76.7	73.5	18.8	51.9	3/6	47.0	51.0
Rolls, on rolls	3/6	95.0	98.0	74.5	62.5	3/6	99.0	75.0
Purifiers, conveyors	3/6	100.0	100.0	100.0	100.0	3/6	98.0	78.0
Purifiers, feed hoppers	3/6	60.0	67.0	24.4	9.1	3/6	93.0	98.0
Purifiers, on screen	3/6	55.0	66.0	41.8	31.5	3/6	85.7	61.0
Stock conveyors	3/6	100.0	100.0	100.0	100.0	3/6	26.0	30.0
Flour conveyors	3/6	98.5	99.0	96.5	96.7	3/6	57.5	12.4
Spouts below sifters	3/6	63.0	35.0	65.0	33.0	3/6	49.0	20.0
Elevator heads	3/6	56.0	25.8	50.0	27.0	3/6	9.0	11.6
Reel conveyors	3/6	No sample	No sample	100.0	100.0	3/6	No sample	No sample
Screening conveyors	3/6	No sample	No sample	100.0	100.0	3/6	100.0	100.0
Boots	3/27	100.0	97.6	100.0	97.8	5/1	77.1	36.8
Rolls, feed hoppers	3/27	71.4	61.8	33.3	30.1	5/1	27.8	20.0
Rolls, on rolls	3/27	65.2	17.0	37.5	11.1	5/1	56.7	38.9
Stock conveyors[1]	3/27	100.0	100.0	100.0	96.5	5/1	29.1	21.5
Flour conveyors[1]	3/27	100.0	100.0	100.0	100.0	5/1	53.5	19.4
Purifiers, conveyors	3/27	100.0	97.4	100.0	96.0	5/1	65.5	52.0
Purifiers, feed hoppers	3/27	75.0	12.5	62.5	17.6	5/1	45.0	18.8
Purifiers, screens	3/27	90.0	16.0	37.5	31.7	5/1	33.3	11.8
Sifters	3/27	61.7	31.8	72.2	37.7	5/1	63.3	16.5
Heads	3/27	73.9	39.5	70.7	31.8	5/1	64.2	23.6
Boots	4/24	100.0	100.0	98.7	96.5	5/29	80.9	73.8
Rolls, feed hoppers	4/24	21.1	37.0	45.2	40.5	5/29	22.9	7.9
Rolls, on rolls	4/24	66.6	27.6	80.9	26.9	5/29	23.5	18.0
Stock conveyors[1]	4/24	100.0	100.0	100.0	100.0	5/29	66.6	50.8
Flour conveyors[1]	4/24	100.0	100.0	100.0	100.0	5/29	27.4	31.9
Purifiers, conveyors	4/24	63.5	53.3	62.5	42.8	5/29	100.0	97.5
Purifiers, feed hoppers	4/24	71.4	60.0	37.5	7.7	5/29	35.3	19.2
Purifiers, screens	4/24	85.7	25.9	24.0	17.8	5/29	20.0	9.8
Sifters	4/24	60.8	23.4	70.4	35.0	5/29	45.9	20.4
Elevator heads	4/25	55.4	28.8	50.0	17.7	5/29	37.7	18.6
Boots	5/22	100.0	100.0	100.0	100.0			
Rolls, feed hoppers	5/22	96.2	85.7	74.4	63.6			
Rolls, on rolls	5/22	90.3	67.6	90.9	72.4			
Stock conveyors[1]	5/22	100.0	100.0	100.0	100.0			
Flour conveyors[1]	5/22	100.0	100.0	100.0	100.0			
Purifiers, conveyors	5/22	100.0	100.0	100.0	100.0			
Purifiers, feed hoppers	5/22	76.6	56.6	15.4	4.3			
Purifiers, screens	5/22	44.4	24.2	47.5	24.5			
Sifters	5/22	55.5	34.1	34.6	32.3			
Elevator heads	5/22	16.8	8.0	16.1	6.6			
General fumigation, methyl bromide	6/19/55 -- A and B Mills							
Boots	7/17	100.0	100.0	100.0	100.0	6/26	90.2	82.6
Rolls, feed hoppers	7/17	60.0	45.2	46.9	31.1	6/26	10.0	8.7
Rolls, on rolls	7/17	57.4	51.7	78.2	78.5	6/26	34.8	10.6
Stock & dust conveyors[1]	7/17	100.0	100.0	100.0	100.0	6/26	60.9	53.6
Flour conveyors[1]	7/17	100.0	100.0	100.0	100.0	6/26	31.5	32.9
Purifiers, conveyors	7/17	92.0	72.9	100.0	100.0	6/26	65.8	73.5
Purifiers, feed hoppers	7/17	19.6	4.8	20.7	8.2	6/26	36.2	33.3
Purifiers, screens	7/17	22.7	5.4	40.2	30.0	6/26	22.6	12.2
Sifters	7/17	45.1	44.5	58.9	48.5	6/26	23.4	12.9
Elevator heads	7/13	45.5	29.5	22.3	12.9	6/26	7.5	5.3
Boots	8/14	100.0	100.0	100.0	100.0	8/21	100.0	100.0
Rolls, feed hoppers	8/14	33.3	22.6	73.1	66.1	8/21	50.0	42.6
Rolls, on rolls	8/14	68.9	67.7	49.2	43.1	8/21	62.3	39.7
Stock conveyors[1]	8/14	100.0	100.0	100.0	100.0	8/21	51.9	43.8
Flour conveyors[1]	8/14	100.0	100.0	100.0	100.0	8/21	46.1	36.0
Purifiers, conveyors	8/14	100.0	100.0	100.0	100.0	8/21	100.0	100.0
Purifiers, feed hoppers	8/14	30.9	27.4	20.0	12.1	8/21	86.2	47.4
Purifiers, screens	8/14	14.0	9.8	41.4	32.8	8/21	22.9	6.1
Sifter spouts	8/14	48.7	40.4	54.1	39.8	8/21	46.2	31.4
Elevator heads	8/14	45.7	27.8	31.9	21.9	8/21	33.9	13.9
Boots	9/11	100.0	100.0	100.0	100.0	9/18	100.0	93.2
Rolls, feed hoppers	9/11	40.9	32.1	19.2	17.9	9/18	37.7	32.3
Rolls, on rolls	9/11	47.1	25.9	60.9	60.9	9/18	55.9	45.1
Stock conveyors[1]	9/11	100.0	100.0	100.0	100.0	9/18	52.5	45.8
Flour conveyors[1]	9/11	100.0	100.0	100.0	100.0	9/18	86.4	83.4
Purifiers, conveyors	9/11	100.0	96.4	100.0	100.0	9/18	98.0	81.4
Purifiers, feed hoppers	9/11	19.6	6.9	37.5	14.3	9/18	55.3	32.9
Purifiers, screens	9/11	27.1	7.7	40.7	10.7	9/18	24.5	4.0
Sifter spouts	9/11	44.8	30.8	43.9	41.7	9/18	55.5	43.8
Elevator heads	9/11	47.7	19.1	23.5	11.3	9/18	51.5	27.4
Boots	10/9	98.6	98.8	100.0	100.0	10/16	90.6	74.0
Rolls, feed hoppers	10/9	52.2	52.8	38.6	36.4	10/16	29.6	23.2
Rolls, on rolls	10/9	61.7	71.1	64.4	50.0	10/16	28.6	20.3
Stock conveyors[1]	10/9	100.0	100.0	100.0	100.0	10/16	51.2	38.5
Flour conveyors[1]	10/9	100.0	100.0	100.0	100.0	10/16	67.2	50.7
Purifiers, conveyors	10/9	92.4	84.1	100.0	100.0	10/16	95.9	94.0
Purifiers, feed hoppers	10/9	16.7	9.8	56.4	38.9	10/16	16.0	10.3
Purifiers, screens	10/9	14.3	9.5	23.6	12.6	10/16	6.8	4.4
Sifter, spouts	10/9	37.0	32.8	49.3	41.8	10/16	20.8	21.9
Elevator heads	10/9	40.4	16.7	32.5	18.4	10/16	32.9	25.2
Boots	11/6	100.0	100.0	100.0	100.0	11/13	87.4	82.7
Rolls, feed hoppers	11/6	32.2	17.3	27.4	15.8	11/13	6.8	6.3
Rolls, on rolls	11/6	60.0	55.8	56.9	43.5	11/13	93.2	75.3
Stock conveyors[1]	11/6	100.0	100.0	100.0	100.0	11/13	98.4	77.2
Flour conveyors[1]	11/6	100.0	100.0	100.0	100.0	11/13	69.9	51.7
Purifiers, conveyors	11/6	85.9	71.7	100.0	100.0	11/13	83.3	69.6
Purifiers, feed hoppers	11/6	14.5	5.4	16.9	10.0	11/13	47.7	12.2
Purifiers, screens	11/6	5.6	0	12.1	2.2	11/13	21.6	11.3
Sifter spouts	11/6	36.1	33.3	47.7	45.4	11/13	73.6	52.0
Elevator heads	11/6	22.0	12.3	41.2	21.4	11/13	59.9	23.1
						General fumigation with methyl bromide 12/11/55		

The species found in the boots are listed below:

	Number	Per cent of total
Flour beetle larvae	107	43.5
Red flour beetle adults	53	21.6
Confused flour beetle adults	78	31.7
Flat grain beetle	1	0.4
Dermestid larvae	7	2.9
Total	246	

Mortality of Insects in Test Cages

The mortality of insects in the test cages (Tables 2 and 3) was by no means complete. It is possible that the containers protected the insects so that they were not exposed to the same concentrations experienced by the free-living insects in the milling stock. It can be seen that mortality was complete in the milling units where direct application of the fumigants was made but it was not always complete in the milling units which the fumigant vapors had to reach by diffusion. The mortality of test insects was highest in mill B and lowest in mill C.

The application of the fumigants during spot fumigations in mills A and B required approximately 16 man-hours each, and six man-hours for mill C. Total man-hours for application of the fumigants and airing out the mills was 22 for each of

Table 2.--Mortality of test insects exposed in mill machinery units fumigated with spot fumigants.

Location of samples	Mills A and B: Date fumigated	Mortality in Mill A: Adults	Mortality in Mill A: Larvae	Mortality in Mill B: Adults	Mortality in Mill B: Larvae	Mill C: Date fumigated	Mill C Mortality: Adults	Mill C Mortality: Larvae
	1955	Percent	Percent	Percent	Percent	1956	Percent	Percent
Boots	12/4	100.0	100.0	100.0	100.0	1/8	44.2	31.2
Rolls, feed hoppers	12/4	28.8	32.3	15.3	22.3	1/8	0	0
Rolls, on rolls	12/4	13.5	23.1	32.4	19.4	1/8	53.8	33.9
Stock conveyors[1]	12/4	100.0	100.0	100.0	100.0	1/8	46.1	42.2
Flour conveyors[1]	12/4	100.0	100.0	100.0	100.0	1/8	25.6	18.6
Purifiers, conveyors	12/4	100.0	100.0	100.0	100.0	1/8	71.1	56.8
Purifiers, feed hoppers	12/4	0	0	4.1	4.8	1/8	13.9	9.3
Purifiers, screens	12/4	0	1.1	3.0	5.1	1/8	10.0	0
Sifter spouts	12/4	33.1	41.3	30.7	37.5	1/8	27.4	18.6
Elevator heads	12/4	3.5	9.6	15.6	26.2	1/8	12.8	5.5
	1956							
Boots	1/1	100.0	100.0	100.0	100.0	2/5	60.0	59.3
Rolls, feed hoppers	1/1	38.3	30.7	24.6	13.9	2/5	15.8	2.9
Rolls, on rolls	1/1	40.2	38.3	33.3	15.0	2/5	10.0	5.6
Stock conveyors[1]	1/1	100.0	100.0	100.0	100.0	2/5	79.6	78.3
Flour conveyors[1]	1/1	100.0	100.0	100.0	100.0	2/5	58.9	41.9
Purifiers, conveyors	1/1	100.0	100.0	100.0	100.0	2/5	60.0	45.5
Purifiers, feed hoppers	1/1	32.7	19.3	38.2	22.5	2/5	10.5	5.6
Purifiers, screens	1/1	16.4	4.5	30.6	13.3	2/5	26.7	10.7
Sifter spouts	1/1	30.5	20.5	45.5	25.6	2/5	25.7	23.8
Elevator heads	1/1	39.9	20.2	39.1	22.6	2/5	21.8	9.2
Boots	1/29	100.0	100.0	100.0	100.0	3/3	72.9	69.6
Rolls, feed hoppers	1/29	45.7	38.3	27.4	22.5	3/3	35.1	22.5
Rolls, on rolls	1/29	27.4	22.5	35.4	22.2	3/3	17.1	10.3
Stock conveyors[1]	1/29	100.0	100.0	100.0	100.0	3/3	43.1	32.3
Flour conveyors[1]	1/29	100.0	100.0	100.0	100.0	3/3	51.2	38.1
Purifiers, conveyors	1/29	100.0	100.0	100.0	100.0	3/3	100.0	100.0
Purifiers, feed hoppers	1/29	25.0	10.3	39.5	28.6	3/3	32.5	21.9
Purifiers, screens	1/29	14.6	5.5	19.2	1.9	3/3	23.3	3.6
Sifter spouts	1/29	47.5	39.5	44.0	46.8	3/3	39.2	23.9
Elevator heads	1/29	29.5	11.3	33.7	22.9	3/3	28.6	17.9
Boots	2/26	100.0	100.0	100.0	100.0			
Rolls, feed hoppers	2/26	48.8	45.8	64.1	44.4			
Rolls, on rolls	2/26	33.3	35.3	46.2	34.3			
Stock conveyors[1]	2/26	100.0	100.0	100.0	100.0			
Flour conveyors[1]	2/26	100.0	100.0	100.0	100.0			
Purifiers, conveyors	2/26	100.0	100.0	100.0	100.0			
Purifiers, feed hoppers	2/26	17.9	8.1	25.6	17.1			
Purifiers, screens	2/26	15.4	7.7	25.0	12.0			
Sifter spouts	2/26	31.9	23.8	47.1	38.5			
Elevator heads	2/26	34.3	23.7	28.3	15.3			

1/ Methyl bromide was used as the fumigant.

Table 5.--Results of analyses of air samples taken during initial spot fumigation of Mills A and C 1/

Sample No.	Description	Ethylene dibromide	Total fumigant
		P.p.m.	P.p.m.
	Mill C (Fumigant No. 3)		
1	3rd floor--fumigating boots	1.2	9.0
2	4th floor--rolls	0.7	4.0
3	5th floor	2.5	18.0
4	6th floor, east side	3.5	28.0
5	6th floor, west side	12.0	64.0
6	7th floor--purifier--strong odor	10.0	89.0
7	7th floor--reels and purifiers--odor	5.0	55.0
8	Filling pressure tank on 9th floor	9.0	75.0
9	8th floor--sifters and elevators	9.0	43.0
10	9th floor--elevators	3.5	35.0
11	9th floor--conveyor	10.0	78.0
12	8th floor--conveyor--odor noticeable	10.0	24.0
13	3rd floor, 2 hours after fumigation began. Area sample.	0.6	2.5
	Mill A (Fumigant No. 1)		
14	3rd floor--includes filling 24 bottles	0.7	7.0
15	3rd floor--filling 48 bottles	1.7	29.0
16	4th and 5th floors	2.0	22.0
17	6th floor--purifiers	8.3	65.0
18	6th floor--filling bottles	5.2	58.0
19	7th floor--purifier	5.1	74.0
20	9th floor--spouting	13.0	270.0

1/ These air-gas samples were drawn from the mill atmosphere in the working area near the places indicated in the table heading "Description" while the fumigant was being applied to the milling units.

Mill	Man-hours required for Fumigation	Aeration	Amount of fumigant used	Capacity cwt./24 hours
A	16	6	40 gal. No. 1 + 65 lb. CH_2Br	4,000
B	16	6	40 gal. No. 2 + 65 lb. CH_2Br	4,000
C	6	6	16¾ gal. No. 3	8,500

the A and B units and 12 for the mill-C unit.

The labor and material requirements per fumigation are tabulated below, and the dollar cost can be computed from prevailing prices:

Bromide Residues

The results of the residue analyses of volatile organic bromide expressed as ethylene dibromide are given in Table 4. After this study was begun, it was established that organic bromides were not a problem in stored wheat because they do not become tied up in the grain, and are dissipated during aeration of the grain or heating of flour during the baking of bread. (Federal Register, Vol. 21, No. 144, page 5620, Thursday, July 26, 1956, paragraph 120.144.) On this basis, organic bromide residues were exempted from the requirement of a tolerance, but a tolerance of 50 p.p.m. of inorganic bromide residues in stored wheat was established. There is no tolerance or exemption as yet for bromide residues in the milling stock. Until tolerances have been established, fumigated milling stock should be removed from the milling units after fumigation and discarded. The residue analyses made during this study, although not of immediate significance, may be of value later in establishing a tolerance or exemption for organic bromide residues in milled products.

Table 4 shows that fairly high levels of organic bromide were usually present in the "start-up flour", and that the bromide content on the "on grade" flour was reduced in varying amounts. The feed fraction (bran) had only small amounts of bromide at "start-up."

Gas Concentration

Table 5 shows the amount of ethylene dibromide and Table 6 the amount of acrylonitrile present during the initial spot fumigation of the three mills.

Concentrations of 0.005% (approximately 50 p.p.m.) of ethylene dibromide are considered to be dangerous to man, and 25 p.p.m. the maximum permissible concentration for the continued exposure of humans. The American Conference of Government Industrial Hygienists accepted 25 p.p.m. as threshold for continuous exposure.

While there were not hazardous amounts of ethylene dibromide present during application of the liquid fumigants in mills A and C, the concentrations of total fumigant in the air were above a safe level. There were hazardous amounts of acrylonitrile in the air samples taken during fumigation of the mill B. The maximum safe concentration of acrylonitrile in air is considered to be 20 p.p.m. It was concluded that the fumigators should wear masks equipped with the type cannister to protect against the fumigant vapors.

The parts per million of methyl bromide in air samples taken when methyl bromide was used in the mills A and B for inaccessible units, are recorded in Table 7. For the prevention of methyl bromide poisoning,

D. A. Welte

ELEVATOR ENGINEER — The appointment of D. A. Welte as elevator production engineer for Central Soya Co., Inc., was announced by C. I. Finlayson, production manager. He will have companywide responsibilities for all phases of elevator operations. Mr. Welte has had 29 years of elevator experience at Kansas State Grain & Inspection Department, Wichita Terminal Elevator Co. and elsewhere. For the past four years he has been operating superintendent of the New Orleans Public Grain Elevator. He is second vice president of the International Chapter of Grain Elevator & Processing Superintendents. His office will be at the company headquarters in Fort Wayne, Ind.

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Table 6.--Results of analyses of air samples taken during the initial spot fumigation of Mill B with Fumigant No. 2 1/

Sample No.	Description	Acrylonitrile	Total fumigant
		P.p.m.	P.p.m.
36	6th floor--purifier	44	50
37	6th and 7th floor purifiers and filling bottles	57	64
38	8th floor--one reel	30	35
39	9th floor-spouting, and filling bottles	105	118

1/ See footnote to table 5.

it is essential to keep the concentration in air below 20 p.p.m. and these levels are considerably in excess of this amount.

Table 8 shows the amount of fumigant and/or components present in the working area prior to and during the start-up of mills A, B, and C.

Conclusions

In the three mills spot fumigation, although reasonably effective, did not completely control existing insect populations, as indicated by the percentage of elevator boots infested. When general fumigations eliminated insect populations, all three spot-fumigant formulations maintained a satisfactory low level of insect infestation for several months thereafter.

Results obtained by including test cages of insects in various milling units indicated that gas concentrations were not uniform throughout the milling system and that studies are needed to improve the distribution pattern of the fumigants.

Gas analyses of air samples taken from the working areas of the three mills during actual application of the fumigants indicated the presence of dangerous concentrations and the necessity for operators to wear gas masks while applying the fumigant.

The use of a semi-automatic pressurized and metered dispenser considerably reduces the labor cost of applying the fumigant.

Table 7.--Results of analyses of air samples taken during the initial spot fumigation of Mills A and B with methyl bromide 1/

Sample No.	Description	Methyl bromide
		P.p.m.
21	5th floor--conveyors, Mill A	289
22	5th floor-conveyors, Mill B	91
23	6th floor--spouts and reels, Mill A	185
24	6th floor--spouts and reels, Mill B	187
25	7th floor--overhead conveyor, Mill B	117
26	8th and 9th floors--conveyors, Mill B	203
27	9th floor-conveyors, Mill A	146

1/ See footnote to table 5.

Table 8.--Results of analyses of air samples taken prior to and during the start-up of Mills A, B, and C, 24 hours after application of spot fumigants and methyl bromide

Sample No.	Description	P.p.m. by volume of					
		Ethylene dibromide	Fumigant No.3	Methyl bromide	Fumigant No.1	Fumigant No.2	CCl_4
		P.p.m.	P.p.m.	P.p.m.	P.p.m.	P.p.m.	P.p.m.
28	3rd floor of Mill C prior to start up	5.0	8.0	---	---	---	---
29	5th floor of Mill C prior to start up	4.5	15.0	---	---	---	---
30	9th floor of Mill C while starting up	2.0	3.4	---	---	---	---
31	9th floor of Mill A while starting up Strong odor of EB-15	10.0	---	10.0	211.0	---	---
32	2nd floor of Mill C while packing the first bran out	2.0	5.0	---	---	---	---
33	3rd floor of Mills A & B between boots. No odor	1.0	---	2.0	18.0	---	---
34	9th floor of Mill B, 15 minutes after start up. Noticeable odor of ACN (acrylonitrile) 1/	---	---	10.0	---	191.0	22.0
35	2nd floor of Mill A while packing out bran	1.3	---	8.0	20.0	---	---

1/ Another common name is vinyl cyanide.

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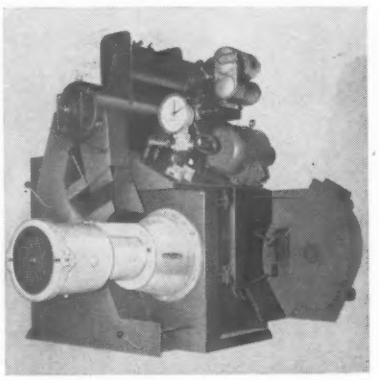
"Multi-Duty" Pellet Mill Announced By Wenger Firm

SABETHA, KANSAS — The Wenger Mixer Manufacturing Co. has announced a new type of feed processing unit—a packaged unit pellet mill designed to produce (1) hard pellets (with or without liquids); (2) mash feeds with one or more liquid ingredients; and (3) high-molasses pellets (optional).

The new unit will be shown for the first time at the Feed Industry Show May 1-3 in Chicago.

The "Multi-Duty" is offered in both 50 h.p. and 75 h.p. construction (1800 rpm motors). It includes adjustable percentage feeder for mash feeds, a dual steam conditioner, a high speed mixer, a liquid conditioning tank with built-in heating coils, a metered flow pump (for molasses, animal fats or fish solubles), a butterfly valve for mash feeds, a mash feed packer or mash feed bin spout, plus a rotary ring type pellet mill. A second liquid conditioning tank and metered flow pump are optional equipment where multiple liquid blending is desired. A high-molasses pellet extruder is available as optional equipment which may be purchased with the basic unit (hard-type pellet mill-mash feed unit), or may be obtained at a later date, a Wenger spokesman said. The company, he said, will equip these units with horizontal pellet coolers, crumble rolls and scalpers.

"This unit was designed to reduce equipment expenditures, installation costs, contamination hazards and manpower requirements per ton of feed," Wenger said. "The medium size mill can produce every major type of feed in a single unit.



Unit with High-Molasses Pellet Extruder

"The change-over from pellets to mash feeds with liquids can be made in one minute. With proper scheduling of formula changes, mash feeds may be run between pellet runs (where die changes must be made at the same time as formula changes), thus keeping the equipment and the packing crew and other workers busy even during periods when the pellet mill is shut down for die changes. To make practical this one-minute change-over from pellets to mashes-with-liquids (or one-minute change-over from one pelleted formula to another where die change is not required), Wenger will supply the Multi-Duty with optional feeder extension so that the unit may be fed with dry premixed mashes from either of two adjacent overhead bins."

——BREAD IS THE STAFF OF LIFE——

CANADIAN OAT EXPORTS

WINNIPEG — Canada exported 1,659,000 bu. oats in March to boost the eight-month total to 7,730,000 bu., according to latest figures of the statistics branch of the Board of Grain Commissioners for Canada.

Mr. Gene Lane, Utility Operator, at the Central Soya Co., Inc., Chattanooga, Tenn. plant, operates 36 Merchen Scale Feeders that blend feed ingredients to 1% accuracy.

MERCHEN SCALE FEEDERS

"give us accurate, continuous blending over a wide feed range"

Central Soya Co., Inc., blends millions of bags of animal and poultry feed a year at their new Chattanooga plant. Up to 50 different formula feeds are produced to exacting standards. Central Soya chose W&T Merchen Feeders because they give 1% minute-to-minute accuracy over a wide feed range. As seen in the picture, the feeders are compact—with no bulky enclosures.

Merchen Scale Feeders, with feed rates from 3 to 3000 pounds per minute, require no adjustment for changes in material density. They are suited for most industrial continuous blending or automatic batching processes. For more information about Merchen Scale Feeders, write for Bulletin M-36.

WALLACE & TIERNAN INCORPORATED

25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

This is what we said in an advertisement 'way back in 1926. It's just as true today.

Why Clean Grain for Milling?

Since modern bakeries have so extensively replaced home baking, grain cleaning has become much more important. Modern bakers judge flour entirely by such standards as comparative color, loaf volume, ash content, protein, etc.

These conditions have led to the creation of formulae and flour specifications. In order to fill the specifications of the bakers, millers in turn have found it necessary to blend various wheats. The wheats having the needed combinations of properties are seldom obtained from one locality, but must often include blends from wheats raised hundreds of miles apart.

Naturally, the wheats from the different sections vary as to the nature and percentage of foreign matter.

These are the conditions that demand grain cleaning equipment that is accurate, flexible, and easily adjusted.

Many statements have been made regarding the real value of grain cleaning. One mill president remarked a while ago that he was decidedly pleased when the Carter-Mayhew organization began the study of cleaning systems as a whole, for in the past, studies of their mills for improvements had always started at the first break rolls. A Superintendent in charge of a 6000 barrel mill stated that the installation of Carter-Mayhew cleaning machinery had so improved the cleaning they no longer had to "fight the mill" to get proper results in the milling process.

To make flour without properly cleaning the wheat causes demands upon the purifiers and sifters that they cannot meet successfully. The result is that much of the more valuable parts of the wheat are carried to the tail of the mill. Clean wheat permits a greater extraction of high grade flour.

To permit the most efficient milling, grain must be free of foreign substances, clean and properly conditioned.

The facilities of America's Largest Manufacturer of Grain Cleaning Equipment are at your service. Write for information on improved grain cleaning methods.

BALANCED CLEANING

HART-CARTER CO.

673 19th Ave. N.E., Minneapolis 18, Minn. • STerling 9-2417

EDITORIAL

NOT FOR SELF BUT FOR ALL

FLOUR millers perhaps are too sophisticated today for mottoes. The fine old slogan, "Not for Self But for All," emblasoned on the symbolic escutcheon of the Millers National Federation at the time of its organization five and fifty years ago is now-a-days seldom heard. Appropriately, because this week's issue of The Northwestern Miller will be read just before or during the annual meeting of the federation which is to be held in Chicago May 15-17, shield and motto have been polished up by our editors, as will be noted, for cover-page presentation.

For mere neophytes of the flour milling industry, who have been a part of it for upwards of only a quarter of a century or so, some explanation of the motto may be thought necessary. Interpreting its meaning, Mark N. Mennel said to the convention of 1914: "It sounds the spirit of present-day business ethics and methods. The federation in its attitude toward any trade problem must have a broad conception, which necessarily takes in the welfare, not only of the miller but of the producer, the distributor and the consumer. We have a direct relationship to the public, for the public includes both producers and consumers. What benefits us benefits them, and what benefits them benefits us. Hence our slogan: 'Not for Self But for All.'"

It may be said that self-discipline is the federation's chief reason for being. Formed at the beginning of the modern merchandising era, the federation was designed to meet distribution problems that were inherent in the industry's intense competition. The old millers' association which it supplanted was not equipped for this struggle. It had been set up to deal with specific problems growing out of the so-called technical "revolution in milling" which transformed the industry and gave birth to over-capacity, the Satanic creature that has been blamed as one of the chief inciters to competitive sin.

From the very beginning of the federation's career the prophets cried out for industry discipline. As early as 1908 convention agenda was devoted to internal troubles. Sometimes government interference was invoked, though almost unswervingly the federation has stood firm against bureaucratic umpires. The controls during the great wars, the depressions and the emergencies often proved an easy way out of economic difficulties. In spite of the inconveniences, irritation and costliness of government regulations Uncle Sam has been generous to the milling industry and it has profited under his benevolent arm when profit there might have been none under the competitive system at its worst. But government control nevertheless has been unacceptable in principle and in fact.

The industry has always known what was wrong with it. Its prophets have spoken clearly. Their voices have told and retold the old story. The remedies, too, have been clearly and unmistakably stated—not once, but year after year throughout the whole history of the federation.

The prophets and spokesmen passed judgment upon the federation's failures. They assayed millers' problems and weaknesses. They proposed remedies. They cried out for repentance from those—not omitting themselves—who fell from grace.

What was the besetting evil in the industry, and what was the cure? The evil was destructive price competition and the cure was self-discipline.

Sydney Anderson, in his presidential address to the convention of 1926, summed up the voices of the industry's physicians and prophets. He said:

"Wheat milling is an ancient and honorable profession. It handles a product which through countless ages has been the principal food of half the people of the world. Its manufacturing processes are highly developed and efficiently economical. It is operated by men of fine intelligence and high integrity. Its product is in continuous demand and indispensable to health and life. The domestic utilization of the product is capable of definite ascertainment in advance of manufacture, and the percentage of capacity necessary to produce it can be calculated within a small percentage of error. Seasonal fluctuations, the vagaries of public taste and the style element are wholly lacking. The product is of uniformly high quality and enjoys almost universal esteem.

"With all these advantages, why is it that the milling industry is in a state of almost continuous demoralization? There are doubtless fundamental defects of merchandising policy which lend themselves to producing demoralization, but after all the reason is, firstly, psychological.

"The milling industry is highly individualistic in ownership, purpose and action. We have not yet discovered that we are an industry—the prosperity of each of us inextricably bound to the condition that surrounds the industry as a whole. We have not learned that our individual actions in the aggregate determine the competitive condition under which we are all blessed or cursed. It is always 'the other fellow' who is making the trouble. We seem to forget that we are each of us the other fellow's other fellow. We have not learned the lesson of cooperation, of mutual confidence and good will, of individual adjustment to the known facts of the industry. We have not learned the lesson of voluntary adherence to sound business practice, every deviation from which is an invitation to reprisal. Ruthless warfare of competition has created an atmosphere of distrust where cooperation cannot exist. Unless we can restore our confidence in each other, every piece of machinery which we may establish, every effort we may make to re-establish conditions of normal competition within the industry, will be futile."

Old Dad Fetchit of the Fish River Roller Mills was inclined to discount Sydney Anderson's dismal view of the milling situation. He said: "I've noticed that when millers does a considerable sight of groanin', when they quit millin' and go into somethin' else, they don't do no better. There was Uncle Jim Cummins closed down his mill up to Buttermilk Springs an' went to makin' some new kind of moonshine colored up with pawpaw juice. It weren't no time at all 'til his still got overhet an' busted in his face, dang nigh blowin' his eyes out. Then right after that the law ketched him an' wouldn't hardly let him out on a bail bond. Jim says hisself he wishes as he'd stayed a miller an' I don't blame him none."

And over and above all millin' misdemeanors and peccadilloes Old Dad was always able to philosophize in some such manner as this: "Well, sir, onct in a while when flour is right hard to get shet of an' I got a binful of wheat with the price slidin' an' everything gets to kind of scratchin' and itchin' a feller to up and undercut the damfool competition, I jes' wonder what in tarnation's the sense of bein' a miller. An' then I get to considerin' how pretty near everybody around in these hills has growed up on 'Fetchit's Pride,' an' I always made it as good as I know how an' played fair accordin' to my light, an' how the only thing I owe anybody is good will. An' first thing I know the itchin' an' worryin's plumb stopped an' I can't help but think what a pity it is the Almighty didn't fix it so's everybody in the world could be a miller an' happy an' contented."

Ef'n Old Dad is still as mellow as this about millin' an' was at the operatives' meetin' in Buffalo a while back his Fish River Roller Mills are like as not pretty much tore up with modernization by this time. There doesn't seem to be a modernization topic on the federation program, but some echoes of the really sensational modernization talk at Buffalo seem likely to be heard in Chicago's convention corridors.

Distempers of the marketplace undoubtedly will have airings at this year's federation meeting, as in virtually all meetings of prior years, for, as was noted recently on this page, there are many millers who would say, reluctantly but with unhappy conviction, that price levels in the current high-production crop year have been incomprehensively low.

Light is expected to be shed on the subject of pricing—and possibly heat may be generated—by Dr. Richard B. Heflebower of Northwestern University, who is reputed to be one of the nation's foremost students of price structures in the bulk products industries. Dr. Heflebower is no stranger to the flour milling industry, for he occupied a key wartime position in the Office of Price Administration and may be presumed to know a great deal about what makes millers tick. He is regarded as a tough-minded economist whose specialty has been pricing and competitive methods in basic industries. He will dissect the methods of operation in a number of these industries, with particular reference to flour milling.

Another subject for solemn contemplation and prognosis is the decline that is taking place in the grain storage business and the effect this will have upon the over-all operation of the flour milling industry. But there will be happier subjects, too. One is forecast in this week's issue of The Northwestern Miller, which contains a survey of the flour export outlook that should prove gratifying. It is a logical sequel to previously published articles by George Swarbreck on the sensational restoration and expansion of flour milling capacity in foreign countries that are competitors in the world export market. Concerned as they must be over this world development, flour exporters of this country may take lively satisfaction in the activity of the federation in re-establishing and maintaining historic export markets and in developing new trading opportunities.

——BREAD IS THE STAFF OF LIFE——

AN UNKNOWN SANTA CLAUS

DOLLAR gifts to the world's dollarless have found takers reluctant when they suspected that "strings" of one kind or another were attached. Such appendages might be return favors—trade advantages for U.S. exports, or merely some sort of promise not to go Communistically punch drunk on U.S. money.

But it now appears that at least in Southeast Asia, where so-called "neutral" nations abound, not only are strings visible but the dollar donors themselves are unknown to the beneficiaries. Such a report comes from Clem D. Johnston, chairman of the executive committee of the Chamber of Commerce of the U.S., who has just completed an account of two months of observation of the relief and rehabilitation program in Vietnam, Thailand, Cambodia, Laos, Burma and Indonesia, which have been absorbing U.S. taxpayers' money at the rate of almost a billion dollars a year. As an example of official and general public attitudes toward U.S. aid, Mr. Johnston says that a recent poll has disclosed that despite the U.S. contribution of more than 90% of the Laos budget, only 2% of the Laosians have ever heard of American aid. Evidently Laosian public officials have been too busy looking for strings to afford time enough to tell the people about Santa Claus.

Foreign Commentary... By George E. Swarbreck

Joseph Rank to Lead British Millers

Joseph Rank, managing director of Joseph Rank, Ltd., a leading British flour milling firm, is to be president of the National Association of British and Irish Millers. His appointment is expected to be confirmed at the association's annual convention June 24-27.

Mr. Rank is a grandson of the late Joseph Rank, founder of the group. He has a wide experience in the family business and while he does not pretend to be a technical man (he admits to obtaining only a mediocre intermediate milling certificate after his training course) his knowledge of the commercial side, according to those who have worked closely with him, is sound.

The late Joseph Rank insisted that his sons become millers before they were allowed to enter the office and move up into higher executive posts. J. Arthur Rank, head of the parent company, Ranks, Ltd., it is said, is quite capable of doing any job in the mill even today.

Last year, talking to a group of flour milling students, Joseph Rank declared that the bulk of the milling industry in Britain is very much wiser and more experienced than it used to be and recognizes these basic facts:

"That it is justified in making a reasonable return on the money which is invested in the industry.

"That a certain amount of imported flour is bound to come into the U.K. You cannot get rid of it altogether.

"That anything one miller can do, another miller can do, too. In other words, if A loses trade because B has cut the price, A can retaliate and so on until everyone is losing money. There is no future in that and the responsible members of the industry realize that full well."

Mr. Rank explained his final point this way: "The millers are prepared to put up with one miller always being below them with his price, because they know that he can only do a certain amount of trade and as soon as he considers extending his mill he has to go along to a milling engineer and ask for a quotation for another plant, and when he gets the estimate he suddenly realizes that if he has it installed he will have to charge more for his flour."

"My firm," Mr. Rank stated, "has had some experience of rebuilding mills in the past 10 years, having lost one third of our capacity during the war, and if we were to apply each mill's depreciation individually instead of spreading it over the whole group, the price of flour at the new mills would be a good deal higher than at the old mills."

Fear, Suspicion Future Dangers

Referring to certain dangers in the future which must be guarded against, Mr. Rank declared: "The chief danger that I see is the danger derived from fear. Thank goodness for all the many people who give up a lot of their time to guiding this great industry. It is only by people being prepared to meet together to try to find a common ground for resolving their difficulties that we can combat the evils of fear and suspicion."

"The National Association," Mr. rank said, "has had its ups and downs but it is a well-founded structure and will, I know, continue to play a vital part at the center of the industry's activities. The area associations are no less important. We must give these organizations whole hearted support if we are going to prosper, and if the industry prospers, the worker will also have greater security."

Mr. Rank's Mill Of the Future

Mr. Rank thinks the future is going to bring many mechanical changes. One such change that could happen appears bizarre at first sight, but from the economic point of view there might be something in it. He remarked upon the absence of buildings in an oil refinery for all the machinery is in the open. One of the reasons for this is that the oil men have found it cheaper to paint their machines more frequently than to put them in buildings where they are protected from the weather.

Mr. Rank said: "We may have to come to that in the milling industry. The cost of mill buildings is really staggering and we may find them being built on a steel girder framework with suitable catwalks to form shelter for the machine men. This would involve a condensation problem, but this should not be insuperable."

The trend towards automation in the industry with electronic controls cutting labor to the minimum might lend itself to such structural treatment.

Communist Milling Machinery

A South American miller is buying milling machinery from Czechoslovakia. He's buying it sight unseen because the price is attractive. The total cost of the complete flour production plant is put at $500,000. He says the same amount of equipment might cost him upwards of a million dollars from another source.

This particular miller would not ordinarily risk $500,000 on such a project. But he needs the plant badly and since his government is reluctant to give import licenses for new machinery—his firm received a big allocation for a new mill with foreign machinery in recent years and the government thinks it ought to be satisfied—he bought the license from another company which, on receiving it, was unable to finance the deal.

Pacific Northwest Inventory 104 Million Bushels Wheat

PORTLAND — The Pacific Northwest (Oregon, Washington, northern Idaho) inventory of wheat in all storage positions on April 1 was nearly 104 million bushels, according to Carl R. Richardson, Portland USDA market news service representative.

There was a 27% decrease from the Jan. 1, 1957, level of 141 million bushels. April 1 stocks were the smallest since July 1, 1954, when nearly 80 million bushels were on hand.

On April 1, 1956, there were 165 million bushels of wheat in the Pacific Northwest, 59% more than the present level.

Farm and interior mills and elevators held only 25 million bushels in storage, compared with 74 million bushels a year earlier. Merchant mill stocks totaled 6 million bushels for April this year, down 17% from the 7.2 million bushels on hand a year ago. Terminal and government stocks totaled 73 million bushels while a year ago there were 84 million bushels in these storages.

Wheat Receipts

Receipts of wheat at Pacific Northwest markets from Montana, southern Idaho, and other states during the period Jan. 1-March 31, 1957, totaled 16.7 million bushels.

In the past 10 years this quantity has been exceeded only by 19.4 million bushels brought in during the July-September, 1956, quarter and the 17.5 million bushel inshipment of the April-June, 1952, quarter.

Inshipments since July, 1956, totaled 47 million bushels up to April 1, 1957. Inshipments to date plus 135 million bushels of old wheat carried over on July 1, 1956, and the 1956 crop of 95 million bushels have provided the Pacific Northwest with a wheat supply of around 277 million bushels, compared with an average supply of 169 million bushels.

Distribution of Pacific Northwest wheat during the period July 1, 1956, to April 1, 1957, totaled 176 million bushels, more than double the 81 million bushel distribution for the same months a year earlier.

Average distribution for the first three quarters of the crop year was 92 million bushels for the 1950-54 period.

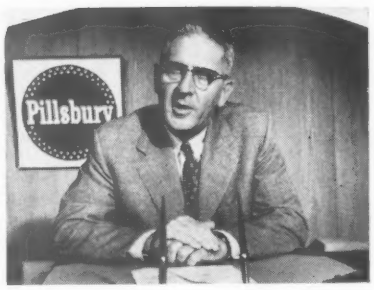
Export Totals

Overseas exports have accounted for 139 million bushels of wheat since July 1, 1956, compared with shipments of only 44 million bushels for the July 1, 1955-April 1, 1956, period and an average of 53 million bushels.

Reflecting an active export trade, white wheat prices at Portland advanced sharply during the January-March period. The cash prices on No. 1 grade white wheat, any protein, April 1 this year stood at $2.63 bu. This was 42¢ above the effective support rate and 41¢ higher than market prices a year ago.

It was also the highest price of over 10 years. As a result, farm markets of 1956 crop wheat were heavy and practically exhausted. Montana No. 1 hard red winter wheat stood at $2.50 bu. on April 1 this year compared with $2.37 a year ago.

Due to higher market prices, grower participation in the government support program was materially less than other recent years.



BAKERS WEEK — Paul S. Gerot, president, Pillsbury Mills, Inc., gave strong support to National Retail Bakers Week April 30 when he appeared, in film, on the CBS-TV Art Linkletter Houseparty. Mr. Gerot urged the audience of more than seven million viewers to be sure to visit their neighborhood bakers during National Retail Bakers Week and called attention to the year round goodness of the fine foods produced by America's bakers.

Rail Chief Attacks Canadian Grain Freight Rate

WINNIPEG—N. R. Crump, president of the Canadian Pacific Railway, has taken a "swing" at Canada's grain freight rates. Agriculture's leaders in Western Canada were quick to counter, but not too much publicity was given to either in the press. However, it appears certain, that before too long, the Crows Nest rates will be under concerted attack. It is equally certain that, as in the past, the West will defend them. The West means the farmers and their organizations; more than 90% of the members of the provincial legislatures regardless of party, and a large section of western business leaders.

It all started in Montreal when Mr. Crump, in his presidential address to the 76th annual general meeting of shareholders, said the Canadian railway industry needs relief from the burden of depressed rates for hauling grain and a revision of the formula used by the Board of Transport Commissioners for establishing permissive earnings.

The Crows Nest rates on export grain have been established by act of parliament and can only be changed by parliament. All other freight rates and regulations are under the jurisdiction of the Board of Transport Commissioners.

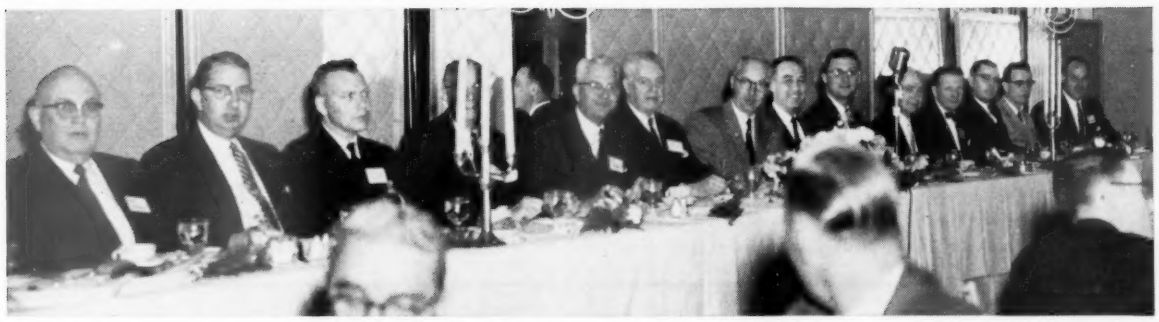
Mr. Crump described grain rates as "one of the most serious handicaps under which the railways operate" and added that it was gratifying to note "that the preliminary report of the Gordon Commission acknowledges the need of the railways for relief from the worst effects of that troublesome combination—rising costs and rigid rates—and suggests that the relief might be in the form of a subsidy."

If and when the showdown comes, the West will insist that the Canadian Pacific Railway produce positive proof that the Crows Nest rates are not profitable to the company.

——BREAD IS THE STAFF OF LIFE——

CANADIAN FARM INCOME

WINNIPEG—Cash income of Canadian farmers from the sale of their products in 1956 is now placed at $2,662 million, or $6.2 million higher than the preliminary estimate in January. This, according to the Dominion Bureau of Statistics is 13% over the revised figure of $2,357 million in 1955.



BULK FLOUR SYMPOSIUM — Bulk flour service to bakers normally taking flour in less-than-carload lots may be approaching reality, some of the experts pictured above feel. Dick Nicholas and Whit Rice of the Semple Co., Philadelphia flour distributor, recently sponsored a symposium for supplying bulk flour to bakers of all sizes whose plants are not on railroad sidings. Time was devoted to questions and answers to help solve individual problems of the 100 eastern Pennsylvania bakers who attended. Prominent on the panel were F. M. Atkinson, chairman of Atkinson Milling Co., Minneapolis; W. R. Heegaard, vice president Russell-Miller Milling Co., Minneapolis; B. V. Hopper, executive sales director, Kansas Milling Co., Wichita; Max Springer, president of Day Sales Co., Minneapolis; John Gleason, General American Transportation Corp.; Edward Clarke, owner of Clarke Bulk Transfer Co., and Ted Ronson of the Fred Pfenning Co.

Seeding of Spring Wheat and Durum Almost Done

MINNEAPOLIS—The 1957 seeding of spring wheat and durum has been pushed to more than 90% of completion in most of North and South Dakota, Minnesota and Montana, just ahead of the rains which began to fall over the area during the weekend of May 11-12.

Most crop reports which expressed concern the latter part of April because seeding was 10 days to two weeks late are now universally optimistic. Warm, dry weather which moved in about April 20 offered almost ideal conditions for planting, and the lost time has been made up in most areas. The progress of spring work in some areas of North Dakota was about two days later than average as the second week in May started, compared with a nine-day delay at the same time a year ago.

There is some seeding yet to be completed in the northern part of the spring wheat belt, principally north from Grand Forks, a condition to be expected because of the retarded disappearance of frost.

Surface moisture conditions have been quite good, and the rains which fell between May 11 and 13 should improve the subsoil moisture situation which was, to that point, only fair in some areas.

In North Dakota, there has been satisfactory emergence of hard wheat and durum, with roughly 30 to 40% of the crop now above ground.

By the beginning of the second week in May reports from Montana estimated that close to 70% of the spring wheat acreage for 1957 had been seeded in that state, and that early plantings were germinating fairly well. There were a few reports of cutworm damage in some parts of the Durum Triangle and in south central Montana.

A study of earlier reports and estimates of 1957 durum production verified the fact that there will be increases in acreage over 1956 in North and South Dakota and Minnesota and probably a decrease in Montana.

FEDERATION HISTORY

(Continued from page 18)

State Milling Co., Winona, Minn., as chairman of the board.

The title of president was added to that of chairman of the board in 1937, when O. D. Fisher, Fisher Flouring Mills Co., Seattle, Wash., was elected to the office. He was succeeded in 1938 by Fred Borries, Ballard & Ballard Co., Inc., Louisville, Ky. R. Ward Magill, Kansas Milling Co., Wichita, Kansas, was chosen in 1940 to succeed Mr. Borries. Mr. Magill was reelected in 1941; Willis C. Helm, Russell-Miller Milling Co., Minneapolis, Minn., was president in 1942 and 1943; Carlton D. McKenzie, McKenzie Milling Co., Quincy, Mich., in 1944-46; W. P. Bomar, Bewley Mills, Inc., Ft. Worth, Texas, in 1946-48; John L. Locke, Fisher Flouring Mills Co., Seattle, Wash., in 1948-50; Howard W. Files, Pillsbury Mills, Inc., Minneapolis, Minn., 1950-52. Ralph C. Sowden, New Era Milling Co., Arkansas City, Kansas, 1952-54; Frank A. Yost, Hopkinsville (Ky.) Milling Co., 1954-56; G. S. Kennedy, General Mills, Inc., Minneapolis, 1956 (renominated to serve until 1958).

In 1929, when Sydney Anderson resigned the presidency, George Livingston was named executive vice president, in which capacity he continued to serve until his resignation in 1939.

Half a Century Ago

The fifth annual convention of the Millers National Federation, held May 28-30, 1907, in St. Louis, was earnestly concerned with correcting trade abuses at home and rehabilitating foreign markets. The keynote of the discussions was disclosed in the general interest in recovering European outlets for American flour.

William Howard Taft, then secretary of war, was one of the convention speakers.

The publicity committee made the following declaration:

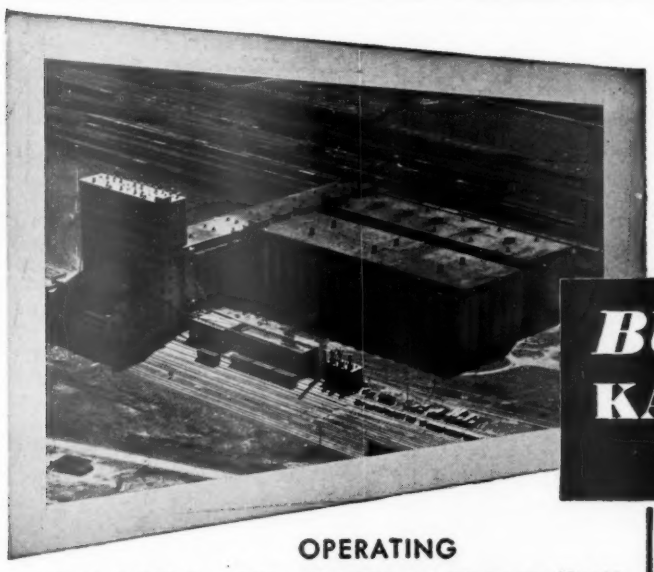
"This committee heartily urges each and every mill to constantly keep before its patrons and consumers in its territory the purity of white flour and its high nutritive qualities. Pound per pound, cost considered, white flour is nearly, if not quite, the cheapest food, and this economy once thoroughly recognized by the masses should result in increased consumption of milling products. We urge millers to present a bold and determined front against the attacks made by many manufacturers of cereal and so-called breakfast foods against white flour, and no step should be left undone that would tend to combat the insidious and false statements made against white flour. We advocate no fight against cereal or breakfast foods, but rather to advise spending our forces to exploit the merits of our own products, of whose merits there is no question."

MENNEL

P.S.* for Hard Spring and Winter Wheat. Cake and Pastry Flours. Cracker and Cookie Flours.

* *Personalized Service*

THE MENNEL MILLING COMPANY
TOLEDO, OHIO



Good wheat is the backbone of any flour business . . . and we are prepared to give you the best. Our buyers know milling wheats. Our storage facilities are immense. Let us serve you. Call Grand 1-7070.

BURRUS MILLS, Incorporated
KANSAS CITY GRAIN DIVISION
BOARD OF TRADE BUILDING • KANSAS CITY, MISSOURI

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SANTA FE ELEVATOR "A"
CAPACITY 10,200,000 BUS.

MILLING WHEAT • CORN • FEED GRAINS

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J. D. TINKLEPAUGH E. M. SUMMERS

Flour Sales Summaries from Leading Markets

Prices reported in The Northwestern Miller's market reviews are for flour packed in 100-lb. cotton sacks unless otherwise specified. Mill list prices are quoted in the principal manufacturing centers and sales prices in the larger distributing centers. They represent average wholesale levels and do not take into account high or low extremes at which occasional individual sales may have been made.

(Continued from page 14)

sas City: Hard winter family short patent, in cottons, enriched $6.10@6.20, bakers' short patent, in papers $5.35@5.40; standard patent $5.25@5.30.

Texas: Demand for flour continued very quiet last week and sales were no more than 10% of capacity. Running time averaged about five days, mostly on filling government orders. Bakers flour was off 5¢ and first clears 10¢, but family flour was unchanged. Quotations May 10, 100 lb. cottons: Extra high patent family $7@7.20; standard bakers, unenriched, $5.90@6; first clears, unenriched, $4.85@4.95, delivered Texas common points.

Salina: Demand for flour the past week was indifferent, with prices closing 7¢ sack lower than the previous week. Shipping directions were very slow.

Oklahoma City: Flour sales were average for this season. Prices closed unchanged on family flour and 8¢ lower on bakery. Quotations May 10, delivered Oklahoma points, carlots: Family short patent $7@7.20, standard $6.30@6.50; bakery unenriched short patent $5.90@6, 95% standard patent $5.80@5.90, straight grade $5.75@5.85. Truck lots higher on all grades.

Central West

Chicago: Flour business continued uninterruptedly dull in the central states during the week ending May 13, and millers expect the situation to hold until almost the new crop period unless an unusual condition develops. Observers say there is little to encourage buyers to take on important quantities. Total sales were estimated at around 25% of five day milling capacity.

First, it is said, most prospective customers are booked fairly solidly. And, with prices showing little inclination to advance, and not likely to soften, little incentive exists for stocking up. So, unless international tension develops or crop scares cast doubt on the outcome of the new crop, most customers are expected to make only hand-to-mouth purchases for the next several weeks.

Quotations May 10: Spring top patent $5.85@6.15, standard $5.75@6.05, clear $5.50@5.75; hard winter short $5.70@5.85, 95% $5.63@5.75, clear $5.70; family $7.55; soft winter high ratio $7.05@7.10; soft winter short $6.05@6.31, standard $5.35@$5.40, clear $4.32@5.25; cookie and cracker flours, papers, $5.35.

St. Louis: Demand for flour in this area was very light. Large users are out of the market, being booked well ahead. Many are supplied to new crop time. The only business being done is on a p.d.s. basis by small bakers. Shipping directions were fairly good. Clears and low grades moved fair. Package goods were slow. Quotations May 10 in 100 lb. cotton sacks: Family top patent $6.45, top hard $7.30, ordinary $6.05. Bakers in 100 lb. paper sacks: Cake $7.15, pastry $5.20, soft straights $5.65, clears $5.35; hard winter short patent $5.95, standard $5.80, clears $5.15; spring wheat short patent $6.40, standard $6.30, clears $6.15.

East

Buffalo: Flour sales were on the slow side last week. The bakers seem to be adequately covered on a day to day basis and are looking ahead to the new crop.

Spring wheat was down 6¢ and Kanasas City flour off 7¢. The Southwest crop report seemed to hold the key to the situation and some improvement is expected from there.

Clears remained unchanged. Little interest was shown as adjustments are made from the old to the new flour. Short patents showed no change.

The export picture is very limited and activity slow.

Flour output here was a little below a week ago and higher than a year ago. Production by one large mill was very limited. Last week one mill worked 7 days, two 6 days, two 5 days and the remaining mill 4⅔ days.

Quotations May 10: Spring family $7.60, high gluten $7.03@7.18, short $6.58@6.73, standard $6.53@6.63, straight $6.48, first clear $6.22@6.24; hard winter short $6.55@6.74, standard $6.45@6.59, first clear $6.29; soft winter short patent $7.43@7.78, standard $7.03@7.08, straight $5.98@6, clear $5.63@5.65.

New York: The demand for all types of bakery flours continued at a slow pace throughout the week. The only market activity reported was widely scattered small bookings for trade faced with early depletion of supplies.

Most hard winter and spring wheat flour buyers are reported holding comfortable balances and seem more interested in reducing these supplies than making new commitments to add to their holdings.

Many mill representatives report directions on bakery flours continuing rather slow.

Quotations May 10: Spring short patent $6.64@6.74, standard $6.54@6.64, high gluten $7.09@7.19, clears $6.10@6.40; hard winter short patent $6.47@6.57, standard $6.32@6.42; Pacific soft wheat flour $7.20@7.82; Eastern soft wheat straights $5.70@5.90, high ratio $6.50@7.60; family $7.60.

Boston: Flour trading was extremely dull in the local market last week. At the opening of trading price advances were recorded, but failed to hold as the week progressed. Springs scored extreme early advances, ranging to about 5¢, and then reacted, to finish with a net loss of 3¢ for the week. First clears held unchanged. Hard winters declined about 7¢. Soft wheat flour was relatively unchanged, the only variation taking place in eastern straights, which declined 5¢.

Dealers reported that buying interest was abnormally dull and that they are doubtful that any substantial increase will occur before harvesting of the new crop. Balances ranged from adequate to plentiful, with the current rate of business activity enabling most users to stretch inventories beyond earlier estimates.

Quotations May 11: Spring short patents $6.65@6.75, standard $6.55@6.65, high gluten $7.10@7.20, first clears $6.12@6.42; hard winter short patents $6.44@6.54, standard $6.29@6.39; Pacific soft wheat flour $7.20@7.84; eastern soft wheat straights $5.72@6.02; soft wheat high ratio $6.52@7.62; family $7.62.

Philadelphia: The firmer undertone in wheat prior to the government winter crop estimate imparted a steadiness to the local flour market, with quotations holding unchanged to 15¢ sack higher than those of the previous week. This development was not accompanied by any improvement in demand, and dealings were said to be at about the same quiet pace of recent weeks. There were some odd-lot purchases by those in immediate need, accounting for the bulk of transactions. Mill representatives report that caution remains the watchword of bakers and jobbers.

Spring grades posted uniform improvement, which restored them to the levels prevalent in early April. But, at the same time, this spoiled any buying appetites that might have been developing. Consumers have been sharing a belief that a further downward revision by mills was in the offing and they were preparing to take advantage of whatever saving might become available. However, it is also realized that stocks, on the whole, are fairly substantial so there is little urgency about the business of seeking replenishments. Bakery sales locally are moving at a rather quiet pace.

Quotations May 10, 100 lb. cotton sack basis: Spring high gluten $7.15@7.25, short patent $6.65@6.75, standard $6.60@6.70, first clear $6.45@6.55; hard winter short patent $6.40@6.50, standard $6.30@6.35; soft winter nearby $5.50@5.60.

Pittsburgh: Flour sales in tri-state and city areas were very small last week. Springs, hard Kansas, soft wheat pastry and cake flours had a little hand-to-mouth buying. Interest lagged in quotations and offers. Family flour sales at local offices were very poor. Directions were poor to fair. It is said new crop is so near that buying will not develop until offerings come on the market.

Quotations May 11: Hard winter standard patent $6.11@6.36, medium patent $6.16@6.41, short patent $6.26@6.46; spring standard patent $6.35@6.58, medium patent $6.40@6.63, short patent $6.45@6.68, first clear $6.26@6.55, high gluten $6.90@7.03; advertised family flour $7.75, unadvertised family flour $6.55@7.08; pastry and cake flours $5.73@7.46.

RETAIL BAKERS' WEEK—The vice president of the U.S. is shown second from left above as he receives a cake in honor of National Retail Bakers Week, which closed May 4. At his left is Charles Schupp, Schupp's Bakery, Washington, D.C., president of the Associated Retail Bakers of America. At the left is August Neuland, president of the Washington Retail Bakers Assn. and at the right is Leo Saemann, vice president of the group. The presentation took place at the vice president's office in the Senate Office Bldg.

South

New Orleans: Extreme quiet was felt in the flour business during the week and sales on all grades were limited to meager quantities and p.d.s. or spot. Bakers and jobbers registered unwillingness to book ahead in view of the weakness in futures and apparently preferred to reduce present contracts. The bulk of business went to hard winters, with some small lots to northern springs on the general lowering of prices. However,

most buyers are holding off, awaiting further reductions and concessions.

Cracker and cookie bakers bought only for spot to 60 days in face of the high level and continued increases in costs.

Family flour was slightly better and some special deals were passing, although the amounts were negligible. Cake flour prices were easier and some rounds were negotiated, showing a fair amount of business for January.

Shipping directions continue good, with stocks well maintained. Export flour business was slow to Europe and the Americas. Inquiries from Norway and the Middle East were active but offered prices were unworkable. A round lot was worked to Cuba, basically 11% protein hard wheat flour.

New Orleans quotations May 10 in carlots, packed in 100 lb. multiwall papers: Hard winter bakery short patent $5.90@6.05, standard $5.75@5.90, first clear $5.20@5.50; spring wheat bakery short patent $6.40@6.60, standard $6.20@6.40, first clear $5.70@6, high gluten $6.75@6.95; soft wheat short patent $5.90@6.25, straight $5.50@5.80, first clear $4.90@5.35, high ratio cake $6.45@6.80; Pacific Coast cake $7@7.30, pastry $6.45@6.60.

Memphis: The tone of the flour market in the Memphis territory was somewhat improved last week as rains finally stopped. Sales were higher but still not quite normal. However, dealers expect business to improve more if dry weather continues and people in rural areas are able to continue working. Prices declined 10 to 30¢. Quotations May 10: Hard winter short patent $6.15; soft winter short $5.95, first clears $5.20, bakery $6.40.

Pacific Coast

Portland: Flour markets were fairly steady, with scattered bookings coming in to the mills. The Quartermaster Corps has bought some flour, and there has been some relief flour booked. Mills have been operating at a steady pace. However, several say they will close the last two weeks in June for annual overhaul, and they are anxious to get their future bookings ground prior to that time. Export mills were operating at a slightly better rate. Prices were unchanged. Quotations May 10: High gluten $7.31, all Montana $7.05, fancy hard wheat clears $7.25, Bluestem bakers $7.18, cake $8.30, pastry $7.15, pie $6.95; whole wheat 100% $6.44, graham $6.19, cracked wheat $6.30.

Canada

Toronto: There was little change in flour business during the week. Domestic trade is steady, but sales for export are light. Quotations May 10: Top patent springs for use in Canada $5.80@6.10 in 100 lb. cottons, less cash discounts, mixed cars, with 15¢ added for cartage where used. Bakers $4.70@5 in 100 lb. papers, less cash discounts, with 15¢ added for cartage where used.

There has been no improvement in demand for winter wheat flour, many users having over-booked their requirements last fall. Quotations May 10: $4.30, 100 lb. export cottons, for export, f.a.s. Montreal-Halifax.

Lack of interest caused easing in prices for winter wheat. Quotations May 10: $1.45@1.48 bu. f.o.b. shipping point.

Winnipeg: Trade in flour shows little change from the past few weeks. Domestic trade is moderately good, but export business is disappointing. Only 163,100 sacks of flour cleared for export in the week ended May 9, compared with 247,400 the previous week. The latest total included only 9,600 sacks of IWA destinations. This was 7,400 sacks less than the preceding seven-day period. Mills are operating on a short week and there is no accumulation of supplies. Prices are unchanged. Quotations May 11: top patent springs for delivery between Fort William and the British Columbia boundary, cotton 100's $5.60@5.90; second patents, cottons, $5.35@5.75; second patents to bakers, paper 100's, $4.50@4.70. All prices cash carlots.

Vancouver: Export flour business out of this port during the week was along routine lines. Latest figures on shipments to the Philippines, the largest outlet for Western Canada, show a considerable drop from recent months. In fact, total shipments for March were down quite a bit, the only bright spots being Central America and the West Indies. Reports from the Philippines indicate no early change in the flour trade there. Also, reports from Indonesia indicate that Canadian mills have practically no chance of competing there against Australian and American shippers.

Domestic quotations are steady. Prices May 10: Hard wheat grinds, first patents in cottons $5.95; bakers' patents $4.90 in paper bags and $5.10 in cottons; Ontario pastry to the trade $6.70 and Ontario cake flour $7.35.

Millfeed

Minneapolis: Millfeed prices dropped last week to the lowest point since last October. There was almost no buying locally, and even nominal quotations were rough and hard to find. The trade credited the lack of business to a reluctance of mixers and feeders to buy as long as prices are declining and pasture is becoming ample.

Prices obtained some of their weakness from the fact that the running time of local mills is fairly good at 5 days and supplies are ample. Standard middlings, which usually draw a fairly good premium over bran at this time of the year, had narrowed to 50¢ over by the end of the week.

Locally, there was a little sack demand as the week opened May 6. But the market became somewhat depressed by mid-week when a mixer began offering middlings for resale to jobbers. Some confidence in the market was lost, and the week ended unsettled and with prices quite soft.

Quotations May 10: Bran $38 50@39, standard midds. $39@39.50, flour midds. $42.50, red dog $45@45.50.

Kansas City: Millfeed prices worked lower in the week ended May 13 with practically all types of feed pressing on the market at the end of the period. Prices were down as much as $3.75 ton from the previous week. Demand is light with lush pastures so prevalent in the Southwest and formula feed business less than rushing for both large and small mixers. Mill running time is pretty good. Quotations May 13, carlots, Kansas City: Bran $36@36.75, off $2 to $2.75; shorts $37.50@38, off $2.75 to $3, sacked; bran $32@32.50, off $3.25; shorts $33@33.50, off $3.50; middlings $32.25@33, off $3.75, bulk.

Hutchinson: Millfeed dropped approximately $2 the past week, continuing a recent decline. This failed to attract heavy buying, however, though supplies were readily absorbed. Nothing was booked ahead for the coming week. Quotations May 10, basis Kansas City, sacked: Bran $36.75@37.25, shorts $38.50@39.

Salina: Demand was slow, with bran $1.50 ton lower and shorts $2.50 ton lower. Supplies were sufficient. Quotations May 9, basis Kansas City: Bran $37@37.50, gray shorts $38.50@39.

Oklahoma City: Millfeeds declined $1.75 on bran and $2.50 on shorts. Quotations May 10, straight cars: Bran $39.75@40.75, millrun $40.50@41.50, shorts $41@42. Mixed or pool cars $1 higher on all classes.

Wichita: Millfeed demand was only fair last week, with offerings sufficient. Bran declined $1.75 ton and shorts $2.50 ton. Quotations May 10, basis Kansas City: Bran $37.25, shorts $39.

Fort Worth: Demand for millfeed was at a standstill last weekend after a fair amount of business earlier in the week. Offerings were not pressing, but were adequate for the demand. Quotations May 10, burlaps: Bran $42.50@43.50, gray shorts $46.50@47.50 delivered Texas common points; $2 lower on both bran and shorts, compared with the previous week.

Chicago: Millfeeds slipped sharply in the central states during the week ending May 13, reflecting virtually no demand from feed manufacturers. Prices were down $2 to $2.50 for the week. Some hope was expressed that the market has reached a point from which it can start a rally. Quotations May 10: Bran $43@43.50, standard midds. $43@43.50, flour midds. $47@47.50, red dog $47.50@48.

St. Louis: Demand for feeds is very poor, and the price trend lower. The supply is adequate. Quotations May 10: Bran $41.75@42.25, shorts $43.50@44, St. Louis switching limits.

Buffalo: Millfeed sales were slow and showed little change last week. Spot supplies were in comfortable shipping positions and there was no buying interest beyond spotting, even at a discount. The flour mills continued to run light. Mixers were quiet with nobody extending. The dairy end of the mixer business, bran, began tapering off. Poultry mash picked up in some sections, but showed no overall strength. Cheap corn in the southern hog country prevented heavy feed from showing a seasonal upswing. Bran was off $1, midds. were down 50¢ and red dog $2.50 to $3.50.

Mill running time ranged from 4¾ to 7 days. Quotations May 10: Bran $46@46.50, standard midds. $47@47.50, flour midds. $50.50, red dog $48.50@50.50.

Boston: Trading in the local millfeed market was extremely slow last week with offerings definitely on the plentiful side. Only a few sales were reported, and these were generally of a fill-in nature for immediate requirements. Canadian bran was about unchanged while domestic gained about $1. Middlings ranged from unchanged on the Canadian offerings to $1 higher on the domestic. Quotations May 11: Canadian bran $56.50@57; domestic $55; middlings: Canadian $56.50 domestic $56.

Philadelphia: Interest in deferred delivery was at a low ebb on the local millfeed market last week. Virtually all transactions involved early shipment. The May 10 list of quotations showed bran at $54, off $2.50 from the previous week; standard

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, ton, packed in 100-lb. sacks, f.o.b. at indicated points:

	Chicago	Minneapolis	Buffalo	Philadelphia	Boston
Bran	$43.00@43.50	$38.50@39.00	$46.00@46.50	$....@54.00	$55.00@57.00
Standard midds.	43.00@43.50	39.00@39.50	47.00@47.50	....@56.50	56.00@56.50
Flour midds.	47.00@47.50	....@42.50	....@50.50	....@	....@ ....
Red dog	47.50@48.00	45.00@45.50	48.50@50.50	....@60.00	....@ ....
	Kansas City	**St. Louis**	**Ft. Worth**	**New Orleans**	**Portland**
Bran	$36.00@36.75	$41.75@42.25	$42.50@43.50	$46.00@47.25	$....@ ....
Shorts	37.50@38.00	43.50@44.00	46.50@47.50	48.00@49.25	....@ ....
Mill run	....@	....@	....@	43.00@44.50	....@ ....

	Bran	Shorts	Middlings
Toronto	$52.00@53.00	$52.00@53.00	$56.00@57.00
Winnipeg	41.00@46.00	....@	....@ ....

SUMMARY OF FLOUR QUOTATIONS

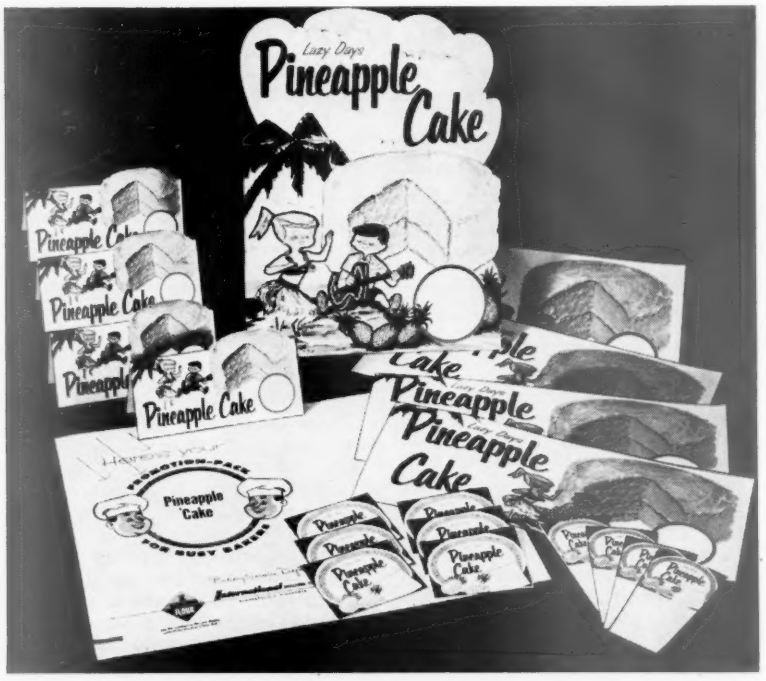
Week-end flour quotations, in sacks of 100 lb. All quotations on basis of carload lots, prompt delivery:

	Chicago	Minneapolis	Kans. City	‡St. Louis	Buffalo
Spring family	$...@...	$6.20@7.35	$...@...	$...@...	$...@7.60
Spring top patent	5.85@6.15	...@...	...@...	...@...	...@...
Spring high gluten	...@...	6.30@6.40	...@...	...@...	7.03@7.18
Spring short	...@...	5.85@5.95	...@...	...@6.40	6.58@6.73
Spring standard	5.75@6.05	5.75@5.85	...@...	...@6.30	6.53@6.63
Spring straight	...@...	...@...	...@...	...@...	...@6.48
Spring first clear	5.50@5.75	5.48@5.83	...@...	...@6.15	6.22@6.24
Hard winter family	...@7.55	...@...	6.20@7.20	6.05@7.30	...@...
Hard winter short	5.70@5.85	...@...	5.55@5.65	...@5.95	6.55@6.74
Hard winter standard	5.63@5.75	...@...	5.45@5.55	...@5.80	6.45@6.59
Hard winter first clear	...@5.70	...@...	4.55@4.90	...@5.15	...@6.29
Soft winter short patent	6.05@6.31	...@...	...@...	...@...	7.43@7.78
Soft winter standard	5.35@5.40	...@...	...@...	...@...	7.03@7.08
Soft winter straight	4.82@5.25	...@...	...@...	...@5.65	5.98@6.00
Soft winter first clear	...@...	...@...	...@...	...@5.35	5.63@5.65
Rye flour, white	...@...	4.40@4.41	...@...	...@5.11	5.34@5.45
Rye flour, dark	...@...	3.65@3.66	...@...	...@4.36	4.59@4.70
Granular blend, bulk	...@...	...@5.95	...@...	...@...	...@...

	New York	Phila.	Boston	Pittsburgh	*New Orl.
Spring family	$...@...	$...@...	$...@7.62	$6.55@7.75	$...@...
Spring high gluten	7.09@7.19	7.15@7.25	7.10@7.20	6.90@7.03	6.75@6.95
Spring short	6.64@6.74	6.65@6.75	6.65@6.75	6.45@6.68	6.40@6.60
Spring standard	6.54@6.64	6.60@6.70	6.55@6.65	6.35@6.58	6.20@6.40
Spring first clear	6.10@6.40	6.45@6.55	6.12@6.42	6.26@6.55	5.70@6.00
Hard winter short	6.47@6.57	6.40@6.50	6.44@6.54	6.26@6.46	5.90@6.05
Hard winter standard	6.32@6.42	6.30@6.35	6.29@6.39	6.11@6.36	5.75@5.90
Hard winter first clear	...@...	...@...	...@...	...@...	5.20@5.50
Soft winter family	...@7.60	...@...	...@...	...@...	...@...
Soft winter short patent	...@...	...@...	...@...	...@...	5.90@6.25
Soft winter straight	5.70@5.90	...@...	5.72@6.02	...@...	5.50@5.80
Soft winter first clear	...@...	...@...	...@...	...@...	4.90@5.35
Rye flour, white	5.10@5.20	5.25@5.35	...@...	...@...	...@...
Semolina blend, bulk	6.69@6.79	...@...	...@...	...@...	...@...

	Seattle		Toronto	**Winnipeg
Family patent	$...@...	Spring top patent	$5.80@6.10	$5.60@5.90
Bluestem	...@...	Bakers*	4.70@5.00	4.50@4.70
Pastry	...@...	Winter exports†	...@4.30	...@...

*100-lb. papers. †100-lb. export cottons, f.a.s. Montreal. **For delivery between Ft. William and British Columbia boundary. ‡Bakery wheat flour in 100-lb. papers.


Lazy Days
Pineapple Cake
Pineapple Cake
Pineapple Cake

AOM CONFERENCE

(Continued from page 12)

duties. He suggested that they be called sanitarians, housekeepers, sanitation engineers or anything but sweepers.

A lot of re-education of all mill employees from the manager down is necessary in order to accomplish the transformation of the sanitation crew into a group proud of their work. In the mills where it is one of the sanitarians' chores to pick up chokes, Mr. McSpadden said, it is amazing how many more and larger chokes are pulled out over the mill where the crew is dedicated to handle the duties of cleaning up around the roll stands or bolters. Mr. McSpadden also mentioned that the millwrights have always had the bad habit of leaving torn-out equipment and flooring for the sanitarians or janitors to pick up and carry out—often it becomes a safety or sanitation hazard. The speaker also censured the lunch eaters who discard their scraps, the oiler who over-oils and the spouter who leaves the spout lid off.

The speaker said the mills are succeeding in their sanitation mission but are doing it at great cost because additional men have been added each time higher sanitation standards were sought. To do a better job but cheaper, the speaker pointed out a number of changes which might be necessary:

The Proper Tools

Are the proper tools being employed to accomplish the job? Mr. McSpadden said that the broom, counter brush, jute bag and dust pan are no longer adequate tools and suggested the judicious use of vacuum cleaning and compressed air to supplement these old stand-bys.

"Ideally," Mr. McSpadden said, "the modernization of all mills to fully pneumatic would be the greatest answer, but how many of us will live to see that day come?"

Better dust control is also very important since many dust collecting systems are inefficient now because of additions to old, poorly engineered and overloaded systems. He said that until the dust collection system is modernized, no number of men will be able to do an efficient job of cleaning.

In closing, the speaker suggested that those hiring sanitation people should pay close attention to personal habits and clothing of the applicant since a dirty worker will mean a dirty plant.

"Our task is to educate our people to the fact we are handling a food product for human consumption, not just an agricultural commodity," Mr. McSpadden concluded. "This food product must be delivered to its ultimate consumer as completely free of any extraneous matter as is humanly possible. To do this it must have been manufactured in clean mills, from clean grain, stored in clean elevators, stored after milling in clean warehouses, and transported in clean conveyances."

Mill Modernization

Another discussion presented to the conference centered around "Economical Mill Modernization." The speaker was Ernest Auer, vice president of MIAG Northamerica Inc., Minneapolis, replacing F. M. Heide of the same firm. Mr. Auer mentioned that the difficult economic situation of the flour milling industry today brings in naturally the question "can we improve the efficiency of the present mill?" Mr. Auer felt that the costs of the grain processing itself are of great interest to the operative miller and the milling technologist, in addition to the questions of grain buying, marketing, packing and transportation expenses.

"The milling industry in the U.S. made considerable cost cuts during the past decades by better use of the available equipment and building—that means increase of capacity—but this development has probably reached a maximum point for the conventional mill," Mr. Auer said.

The capacity load on one machine in a mill or on a complete mill unit is very closely related to the extraction and therefore to the yield, Mr. Auer said. Based on comparable quality factors, the yield is used as the indicator for a well-balanced or improperly-balanced mill.

Pointing out that an efficient relation must be kept between the operating cost of the mill and its capacity, Mr. Auer said, an increase of the mill capacity point reduces within limits the production costs per cwt. because of the better use of labor and capital investment, but at the same time this brings a reduced extraction—or increased yield—because the capacity increase has reached an optimum from which point on the advantages of cuts in operation costs are eliminated by disadvantages of higher yield or reduced quality.

Mr. Auer specifically pointed to the introduction of pneumatic conveying in mills and in cleaning houses as well as in bulk flour handling as new developments. Mr. Auer pointed out that pneumatic lifts require less space than elevator legs. He was of the opinion that the saving in space might yield required space for the installation of additional milling equipment for a capacity increase. He listed several advantages of pneumatic conveying:

Space saving.

Improved sanitation by improved cleanliness.

Reduced fire hazard and increased operational safety.

Improved bolting by cooler grinding, and improved grinding by cleaner bolting.

Reduced moisture losses of low grade flours, and

Cooler flour which means fewer condensation problems in bulk cars, trucks, and storage bins.

Certain disadvantages of the pneumatic system would be a reduced adaptability to capacity increases or flow changes and a higher power consumption. A safety margin is allowed to take care of future capacity increases or changes in the various streams. If it is anticipated that the capacity shall be increased considerably in the future, preparations for this can be made when the pneumatic system is laid out.

Mr. Auer showed pictures to illustrate a solution developed by his firm for the rebuilding and more economical use of an existing flour mill. Cross sections showed an old mill with elevator legs with two mill units of approximately 3,400 sacks total capacity. A new arrangement with pneumatic conveying systems permitted an additional milling unit of 2,000 sacks capacity, and the installation of the pneumatic system made room available to install the complete new mill without any additional construction.

Balance of Flour Mills

Speaking on the "balance of flour mills," Steven A. Herodek, assistant chief engineer of the Maple Leaf Milling Co., Ltd., Toronto, spoke on the factors influencing the balance of flour mills, such as the properties and physical condition of the wheat, the physical-mechanical factors, the size and distribution of the processing machinery, the technological factors and arrangements and the combined effect of those factors.

The importance of the balance of flour mills was pointed out by Dr. Herodek to prove to managements of American flour mills that the "greatly coveted goal of a well balanced mill cannot be reached easily." It is similarly difficult to keep a mill well balanced under continually varying crop and weather conditions and trying to fulfill simultaneously the frequent changing in product demands of the sales departments, Dr. Herodek said.

In defining the balance of a flour mill, Dr. Herodek said, "the balance of a flour mill is the status of a mill during its operation when all conditions of the raw material and of the mill as a whole, including application and adjustment of the processing machinery, are in such optimum harmony that the best milling results can be attained."

MODERNIZATION

(Continued from page 12)

volved over its years of rebuilt operation indicated to some of the listeners that it is economically justifiable to look to new rather than rebuilt equipment. There is not the slightest hope, said one speaker, that rebuilt machines can give the same results that new machines give. New machines, too, pay their way because of the greater productive capacity available at less cost.

Mr. Donovan, drawing on his experiences in South America, dealt with the application of the high capacity methods used in the U.S. to European machines. He stressed that no two millers have the same ideas; they will do things in different ways though the end result may be the same. He felt that the screen room side had been neglected in all mills. Not enough is known about conditioning and much work remains to be done in this field, he said. A long, complicated milling process is useless if the initial work is not done properly.

Dealing with packaging, Mr. Donovan told the technicians that he obtained an output of 500 sacks an hour on each of his Richardson machines. No packing is done until a truck draws into the mill for supplies. He maintains 16 spiral chutes each filled with the various grades of flour and these are used to load the truck, the packers meanwhile refilling the chutes.

One technician said he was firmly convinced that restoration meant self preservation for the flour milling industry and this provided the keynote of the AOM conference. Another miller said: "As a result of the discussions initiated by our association, we are ready to prove to management that improved facilities will bring improved earnings to our trade." No one was optimistic enough to believe that the industry can be rebuilt overnight; it was generally admitted during the question and answer period that complete rehabilitation will take years to accomplish.

Kansas Wheat Group Names New H. Q.

HUTCHINSON, KANSAS—Hutchinson was chosen as headquarters for the newly formed Kansas Wheat Commission at a meeting here last week. The commission office will be located in the Producers Dairy Building, 20 West First.

The first job of the commission was outlining of plans for routine forms to be mailed out to more than 2,000 elevators in the state for collection of the wheat tax levied by the state legislature the past term for financing of the group's operations.

Another problem confronting the group is how to get information to farmers on new developments in wheat programs, according to R. L. Patterson, Oxford, chairman.

Forms for the elevator men will be mailed out soon and are expected to be in their hands by June 1 when the wheat tax law goes into effect.

Henry Parkinson, Scott City, vice chairman, keynoted the opening meeting by saying, "We know we can produce wheat, and it is in the best interest of the state to keep on producing it."

Commission members, besides Mr. Patterson and Mr. Parkinson, are Gib Egbert, Ingalls, secretary; Stanley Harris, Colony; W. W. Graber, Pretty Prairie; Melvin Mustoe, Norton; and Gerald F. Thompson, Mankato.

——BREAD IS THE STAFF OF LIFE——

American Bakeries Reports Earnings; Names Directors

CHICAGO—American Bakeries Co. has reported consolidated net earnings for the 16 weeks ended April 20, 1957, and for the like period of 1956 as follows:

	1957	1956
Net earnings before federal income tax	$3,390,409	$2,944,690
Net earnings after federal income tax	1,661,300	1,431,804
Common shares outstanding	1,596,205	1,596,205
Net earnings per common share	$0.99	$0.85

The board of directors has declared the regular quarterly dividends of 50¢ a share on the common stock and $1.12½ a share on the 4½% cumulative preferred stock of the corporation, both payable June 1, 1957, to stockholders of record on May 17, 1957.

The company has also announced the resignation of John Pirie and William T. Spence as directors. Mr. Pirie, treasurer and secretary at the time of his retirement in 1950, had been a director since 1939. Mr. Spence, a director of American Bakeries Co. of Florida since 1927, became a director at the time of the Florida firm's merger into American Bakeries Co. in 1953.

The company has increased the size of its board from six to nine, and has elected to fill the five vacancies—T. W. Dodd, G. G. Grant, A. W. Koss, D. H. O'Connell, vice presidents, and G. B. Rockafellow, treasurer and secretary. Messrs. Dodd, Grant, and Koss have each had more than 30 years of service with the company.

ELECTRONIC COMPUTER SYSTEM—The home of the new IBM 650 magnetic tape system of Cargill, Incorporated, is this air-conditioned-and-humidified room in the Minneapolis Grain Exchange Bldg. Shown left is control panel of the 650 magnetic drum processing machine, middle foreground is high-speed read-and-punch machine, right foreground printer for preparing written reports, and background four magnetic tape auxiliary storage units.

Cargill Installs Extensive Electronic Computer System in Minneapolis

MINNEAPOLIS — An extensive electronic computer system, the first of its kind in the grain industry and one of the first in the U.S., has been installed by Cargill, Incorporated, at its downtown offices in Minneapolis.

The new system, called an IBM 650 Magnetic Tape Data Processing System, occupies a specially built air-conditioned and humidity-controlled room. The equipment itself comprises: A basic 650 magnetic drum data computer capable of 600 separate calculations a second from 20,000 digits of information; an immediate access storage unit containing 600 additional digits of information for the machine; four magnetic tape units providing readily available auxiliary storage of information and instructions; a high-speed read-and-punch unit to handle 200 punch-cards a minute, and a printer to prepare written reports at 150 lines a minute.

The system is the second of its kind installed in the U.S. for use by a commercial, non-defense firm, according to H. Terry Morrison, Cargill's administrative vice president. Four others were previously installed, however, by industrial companies doing defense work.

System Leased

Cargill's computer system, all of which is leased from International Business Machines Corp., will result in "savings of time, energy and money and in greatly increased accuracy," Mr. Morrison said.

For example, Mr. Morrison pointed to warehouse accounting, a record of grain stocks in Cargill's nationwide elevator system. The routine, which previously required nearly 10 working days (76 hours) on the fastest available mechanical—as opposed to electronic—equipment, now takes only eight hours on the computer. Salary payrolls, that took three days, now take one hour and 40 minutes, and a current month's activity report, that required more than four days, is done in two hours and 15 minutes. Similarly sales analyses, cost analyses, budget breakdowns, insurance plans and countless other time-consuming chores are completed in a fraction of the time.

The new machine further reduces human time and effort by being tied into an "integrated data processing" system which enables reports and statistics received in punch-tape form from Cargill's extensive wire communications network to be fed directly to memory units of the computer.

Greatest Value

All these are the "bread and butter" jobs which earn the computer its keep, Mr. Morrison said. Ultimately, however, its greatest value lies in solving economic and operational research problems designed to influence over-all company planning and policy, he added.

"In each case the question must be precisely defined beforehand and each step in its logical solution charted. If the machine is given faulty information, it's the world's fastest way of arriving at the wrong answer, but if the information and sequence are correct, the most complex problems are capable of solution."

The computer, which contains some 7,000 tubes and 7,000 diodes, is inspected daily by two full-time IBM engineers; direct power lines furnish an unvarying flow of electrical current.

FAST WORK — One problem comprising 4.4 million items of information is contained in a magnetic tape held by a worker at Cargill, Inc.'s, new electronic computer room. The same information prepared for conventional calculating equipment—80 digits on each of 55,000 cards—is contained in foreground stack of card files. Here Joan Rilling touches starting button on IBM 650 magnetic drum processing machine to complete in eight hours a problem that previously required 10 working days (76 hours).

GMI Scientists Have Atomic Radiation Theory on Creation of Living Cells

MINNEAPOLIS — Three General Mills, Inc., scientists have announced that they have been able to form the fundamental building blocks of all living cells by atomic radiation.

Experiments by Raymond Paschke and Robert Chang, chemists, and Donald Young, physicist, indicate that radiation may have been the cosmic tool which formed the first amino acids, the building blocks which may have been transformed into the first cell, and finally, into man.

The researchers irradiated ammonium carbonate, an inert, non-living chemical substance, under vacuum in a sealed glass tube with 500 million roentgen of gamma rays and found that amino acids were formed. GMI has one of the largest radioactive cobalt sources in the U.S. These organic substances are in all living things. In fact, life itself cannot exist without them.

During the early days of the earth, two billion or more years ago, radiation levels were more intense than they are at present. It is possible, or, as these scientists believe, probable, that the chemical building blocks of life itself began in this way.

In an article published recently in Science magazine, Mr. Paschke, Mr. Chang and Mr. Young point out that this great radiation force most likely also destroyed some of the amino acids which it had created. They assume, from this, that organic substances would not concentrate on even the sterile earth, as it was then, unless some great shield were available to protect them once they formed.

The seas could be this shield. Inorganic and simple organic compounds on or close to radioactive rocks above or below the sea could be transformed to amino acids.

These amino acids with the help of rain and ocean currents could have migrated to dark, non-radioactive acean depths where they could accumulate on clays or quartz.

No doubt amino acids are being formed by the above physical processes today, say these scientists. However, these or the rest of the physically formed organic environment can no longer accumulate as it did in the sterile world. Present members of the plant and animal world zealously guard their birthright, quickly devouring any molecules which could give rise to contenders.

Amino acids have been formed by other methods of modern chemistry—use of electrical discharges, ultraviolet rays, etc., on different chemical substances. But the substances used always contained free hydrogen or carbon in a partially reduced form.

——BREAD IS THE STAFF OF LIFE——

ADM Now Negotiating To Purchase Foundry Firm in Cleveland

MINNEAPOLIS — Archer-Daniels-Midland Co., Minneapolis, is negotiating for acquisition of the Federal Foundry Supply Co., Cleveland, Ohio, the two companies have announced.

Warner B. Bishop, Jr., vice president of ADM's foundry products division, and Elmer Ditty, president of Federal Foundry, said it will be several weeks before a final decision is reached.

Acquisition of the Cleveland concern would further diversify ADM's operation in the foundry industry. The company now is one of the leading manufacturers of foundry core oils.

——BREAD IS THE STAFF OF LIFE——

Standard Milling Building Sold

KANSAS CITY—The building that formerly housed the Standard Milling Co. flour mill in Kansas City, Kansas, has been purchased by Midland Laboratories, Inc., and its affiliated firm, the Food Products Corp. The companies are manufacturers of basic ingredients for commercial bakeries and dairies, such as emulsifiers, cultures, icing base concentrates, prepared mixes, vitamin concentrates and flavoring materials. The property was sold by Herbert M. Rope & Associates. Standard Milling Co. closed its mill in that location several years ago.

ATOMIC RESEARCH—These three General Mills, Inc., research scientists made experiments indicating that atomic radiation may have been involved in creating the first living cells from which all animals and plant life is descended. The scientists are left to right, Raymond Paschke and Robert Chang, chemists, and Donald Young, physicist.

CANADIAN PRICE ADJUSTMENTS

WINNIPEG—Price adjustment figures announced by the Canadian Wheat Board and effective May 13 to aid millers in meeting foreign competition in all export markets except the U.S., the U.K. and Europe remain unchanged at all port ranges. The levels now operating, with the previous figures in parentheses, are as follows: Canadian and U.S. Atlantic ports 7½¢ (6½¢); St. Lawrence ports and Churchill, 7¢ (5¢); Canadian and U.S. Pacific ports, 8¢ (7¢). The adjustments can be changed on a day-to-day basis.

Spring Field Work Makes Progress In Canada

WINNIPEG—Spring field work is progressing in Western Canada and is now general in Alberta and most sections of southern and central Saskatchewan and Manitoba. On the average wheat seeding is less than 10% completed, but with favorable weather a substantial wheat acreage should be planted by May 18. There will be a tendency in many sections to hold off seeding coarse grains so that early spring weed growth may be turned under.

The Searle Grain Co. precipitation report covering the period from April 1 to May 7 shows the moisture condition in Alberta to be 74% of normal; Saskatchewan 118% and Manitoba 79% of normal. The weighted average for the three prairie provinces is 103% of normal.

The first report on rust development in 1957 by the Plant Pathology Laboratory, here emphasizes there is no reason to expect a serious rust situation this summer as rust resistant varieties will occupy much of the wheat and oat acreage in Manitoba and Saskatchewan.

Weather turned cool in Western Canada during the week ended May 11, but precipitation was light and field work was barely interrupted. Light frosts occurred in all three provinces, but were too early to cause any damage.

Clifford Murphey, Export Executive Of GMI, Dies

SAN FRANCISCO — Clifford J. Murphey, export sales manager for the Sperry Operations of General Mills, Inc., died unexpectedly, during sleep at his Berkeley, Cal., home May 3. The 53-year-old executive was overcome by a coronary condition while resting after work in his garden.

During his 30 years with GMI Mr. Murphey held several positions in the Tacoma, Oakland, and San Francisco offices, generally associated with export operations. He was appointed to his last position as head of Sperry overseas trade activity in January, 1953.

Following his graduation from the University of California, Mr. Murphey was employed as a clerk in the export department of the San Francisco office. In 1932 he transferred to Tacoma to work with the production planning of export shipments from that mill point. Later he served as Oakland office manager and in bakery flour sales. In 1945 he was named assistant to the export sales manager.

During recent years, Mr. Murphey was prominent in international trade organizations and was affiliated with the Export Managers Assn., World Trade Assn., Foreign Credit Assn., and the World Affairs Council. He is survived by his widow, the former Florence Morgan, of Berkeley; a daughter, Mrs. Timothy Murphy; and son, John.

—BREAD IS THE STAFF OF LIFE—

Nabisco Safety Award Given Buffalo Bakery

BUFFALO—Seventy-six drivers who have accumulated a combined 1,000 years of safe driving were honored at the National Biscuit Co.'s bread bakery, Buffalo, where they are employed. As a result of the record, the Buffalo bread bakery has won the 1956 Nabisco trophy for fleets of more than 50 trucks. Martin P. Lill, bakery manager, received the trophy during the ceremony from G. W. Hardy, district safety director of Lumbermen's Mutual Casualty Co.

OSAKA FAIR—At the Osaka trade fair prominence was given to wheat and flour products. In this picture Dewey Termohlen, left, agricultural attache at the American Embassy in Tokyo, is pointing out a feature to Joe Spiruta, an official of the Oregon Wheat Growers League who has been working on promotional activities for wheat in the Far East.

OREGON

(Continued from page 10)

May 19. USDA states that foreign trade groups, for the first time, have assumed major responsibility for promoting the sale of American farm commodities. Giving assistance is the Oregon Wheat Growers League.

The energetic enterprise of the Oregon growers is paying off in bigger orders for wheat—Japan is already the best customer for Pacific Northwest wheat.

Advertising Campaign

Promotional efforts have taken several forms. Many Japanese children receive a wheat roll with their daily school lunch. But the most telling point achieved so far is concerned with the health giving properties of bread. Since World War II the Japanese have become increasingly health conscious. They want balanced diets.

A major advertising campaign, using posters and pamphlets, is explaining the advantages of wheat as a food. One of the most effective presentations shows a big, muscular man with the caption "wheat eater." Beside him stands a short, thin man who adheres to the traditional Japanese diet.

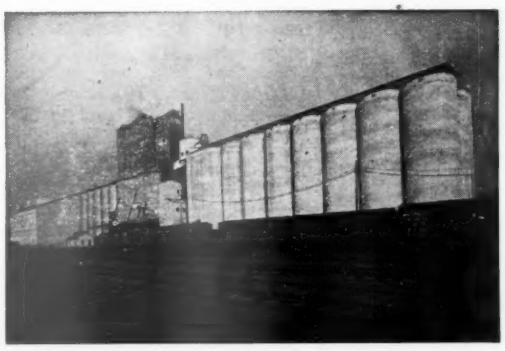
The Oregon Wheat Growers League has assisted in the provision of eight mobile demonstration kitchens which travel from village to village showing the value of wheat foods in a balanced diet. A modern baking school is training 160 bakers and these will eventually return to their home areas to teach the local bakers the art of making good bread.

MNF has assisted in an advisory capacity and the experience gained will be useful in extending promotional schemes, with flour predominant, in other eastern countries.

Promotional work of this nature is but one of the many services rendered by the Oregon Wheat Growers League, but it is work which is paying big dividends in selling an important U.S. product abroad.

STRATTON-THEIS GRAIN CO.

FRANK A. THEIS, *Pres.*
HARRY M. STRATTON, *Vice Pres.*
WILLIAM C. ENKE, JR., *Vice Pres.*
FRANCIS J. FITZPATRICK, *Vice Pres.*
F. L. ROSENBURY, *Secretary*



Operating Union Terminal Elevator

St. Joseph, Mo.

2,000,000 Bus. Storage Capacity

Specializing in MILLING WHEAT and All Grains with definite rate and other advantages supplied by St. Joseph Location.

Main Office
STRATTON-THEIS GRAIN CO.
CHRISTOPHER HARRIS, *Treas. & Mgr.*
Corby Building St. Joseph, Mo.

Stock Market

THE NEW YORK STOCK EXCHANGE

Quotations on baking, milling and allied stocks listed on the New York Stock Exchange:

	1957 High	1957 Low	May 3, 1957 Close	May 10, 1957 Close
Allied Mills, Inc.	30⅝	27⅝	29	29¼
Allis-Chalmers	36¼	32	34¼	35¾
Am. Cynamid	82¼	66¼	80½	81½
A-D-M Co.	39⅜	35⅝	39	39
Borden	61½	51¾	60¼	60¾
Cont. Baking Co.	33¾	29⅝	33¾	33½
Corn Pr. Ref. Co.	32⅛	28	31¼	31⅜
Cream of Wheat	29⅜	28½	29	28½
Dow Chemical	67	56⅜	62⅝	61⅜
Gen. Baking Co.	10	9	9½	9⅝
Pfd. $8	135	128½	132½	133
Gen. Foods Corp.	44¼	40	43¾	44
Gen. Mills, Inc.	69	59¾	64⅛	63¾
Pfd. 5%	115	110	100½	110
Merck & Co.	37⅜	29⅛	36	34½
Natl. Biscuit Co.	38¾	35	37⅝	38¾
Pfd. $7	163½	155	158½	157¾
Pfizer, Chas.	56⅜	42¾	54½	56¼
Pillsbury Mills, Inc.	44¼	40⅜	42¼	42½
Procter & Gamble	50½	44⅝	48¼	47
Quaker Oats Co.	37½	33⅛	37¼	36⅛
St. Regis Paper Co.	48¼	32⅛	33	32⅛
Std. Brands, Inc.	42⅞	37⅜	41⅝	42¼
Sterling Drug	29¼	25½	28⅝	29⅛
Sunshine Bisc., Inc.	74	66⅞	71¾	72½
Un. Bisc. of Am.	29⅝	26⅛	28½	28⅞
Victor Ch. Works	32½	25¾	29	32¼
Pfd. $3.50	84	78½	....	82¼

Stocks not traded:

	Bid	Asked
Merck & Co., $3.50 Pfd.	81	85
Pillsbury Mills, Inc., $4 Pfd.	92	92¾
Quaker Oats, $6 Pfd.	134½	135
St. Regis Paper, $4.40 Pfd.	94	96
Un. Bisc. of Am., $4.50 Pfd.	98	100
Ward Baking Co.	12¾	13
Ward Baking Co., $5.50 Pfd.	91¼	92¼

THE AMERICAN STOCK EXCHANGE

Quotations on baking, milling and allied stocks listed on the American Stock Exchange:

	1957 High	1957 Low	May 3, 1957 Close	May 10, 1957 Close
Burry Bisc. Corp.	6⅛	4⅞	5⅞	6
Hathaway Bak., Inc., "A"	4⅛	3⅝	3¾	3¾
Horn & Hardart Corp. of N. Y.	29⅝	23¼	29	29

Stocks not traded:	Bid	Asked
Horn & Hardart Corp. of N. Y., $8 Pfd.	99⅛	101¾
Wagner Baking Co.	4	4⅛
Wagner Baking Co., Pfd.	98	102

CANADIAN STOCKS

	1957 High	1957 Low	Apr. 26, 1957 Close	May 3, 1957 Close
Canada Bread	3.00	2.60	2.60	*4.75
Pfd. B	55	51	51	52
Can. Bakeries	5	4	....	4
Can. Food Prod.	3½	3¼	3¼	3¼
A	8¼	8	8	8
Pfd.	50	45	*45	45½
Cutelli Food, A	....	....	24½	*18
B	38½	34	....	35
Cons. Bakeries	7	6¼	6¾	*6⅛
Federal Grain	33½	26½	28½	28
Pfd.	28¾	25	....	25½
Gen. Bakeries	5.50	4.85	5.50	5.25
Int. Mig., Pfd.	83	80	....	80
Lake of the Woods, Pfd.	126	122	....	125
Maple Leaf Mlg.	8¾	7	7⅛	7⅜
Pfd.	92	89	....	91⅞
McCabe Grain, A	26	24	....	25
B	26	25½	....	26
Ogilvie Flour	35¾	30	33	35
Pfd.	165	140	....	140
Std. Brands	....	....	....	40
Toronto Elevs.	20	18½	20	19¾
United Grain, A	16¾	16	16	16
Weston, G., A	24⅜	18¼	23¼	22
B	24⅜	19⅛	23⅜	22
Pfd. 4½%	94	90½	91½	92

*Less than board lot.

Newell Gough, Jr. Elected Director Of Montana Mills

GREAT FALLS, MONT.—Newell Gough, Jr., has been elected a director of the Montana Flour Mills Co., Great Falls, to fill the vacancy on the company's board of directors that was created by the death of Norman B. Holter of Helena in February.

A native Montanan, born in Missoula in 1913, Mr. Gough attended the Shattuck military academy at Faribault, Minn., and the University of Montana at Missoula, graduating from the latter with both B.A. and L.L.D. degrees in 1935. In the same year he entered the employ of the Helena law firm of Weir, Clift, Glover and Bennett, practicing in both the Helena and Great Falls offices of the firm until 1942 when he joined the U.S. Army. In 1946, having completed a tour of duty with the 8th Armored Division in the European Theatre, he returned to Helena and resumed the practice of law with his firm.

Mr. Gough is one of the state attorneys for the Great Northern Railway Co.; a member of the board of directors of the Helena Chamber of Commerce; a trustee of the Montana Historical Society; a director of St. Peter's Hospital, Helena; and a member of both the Montana and the American Bar Associations.

——BREAD IS THE STAFF OF LIFE——

Sterling Drug Sets Earnings Records

WILMINGTON, DEL.—First quarter profits and sales of Sterling Drug, Inc., parent corporation for Sterwin Chemicals, were the highest reported for any quarter in the company's history, James Hill, Jr., chairman of the board, disclosed at the annual meeting of stockholders.

Net profit for the three months ended March 31 was $4,821,000, equivalent to 61¢ per share of common stock on 7,902,325 shares (average number outstanding). For the three months ended March 31, 1956, net profit was $4,659,347, or 59¢ per common share (7,822,426 shares outstanding).

Profit before taxes for the 1957 first quarter also reached a new high at $9,871,000, compared with $9,659,347 for the corresponding quarter a year ago.

Sales for the three months ended March 31 were $49,332,542, compared with $45,883,152, an increase of 7.5%.

Walter C. Berger

Walter C. Berger Kansas Field Day Speaker

MANHATTAN, KANSAS—Walter C. Berger, Commodity Stabilization Service administrator, will be principal speaker at the annual Wheat Field Day at Kansas State College, June 14. He is to discuss the work of the Commodity Credit Corp.

The Wheat Field Day is sponsored by the Kansas Wheat Improvement Assn. and Kansas State College.

The day's program will include tours of the experimental wheat field plots, starting at 9:30 a.m. Visitors will see investigations on loose smut of wheat, soil-borne mosaic virus, wheat nursery breeding, wheat rusts, wheat variety plots, fertilizer plots and the flour and feed milling industries machinery and laboratories.

Exhibits will be displayed on spotted alfalfa aphids, virus diseases of wheat and other phases of wheat research.

——BREAD IS THE STAFF OF LIFE——

Wheat Subsidy On Cash Basis To Be Delayed

WASHINGTON—There appears to be no hope that the U.S. Department of Agriculture will put its wheat export subsidy program on a cash basis at the start of the new crop year July 1. Policy-making officials for USDA report that under present conditions such a switch would not be possible at that time.

As in the case of corn movement in recent months, USDA officials say their major problem is management of stocks and the direction of demand for wheat for export to areas where big surpluses have accumulated.

USDA officials have received considerable praise from Corn Belt leaders who say that the management and operation of corn disposal and reconcentration program have been an outstanding success. Observers believe this praise is strengthening Commodity Stabilization Service ideas on wheat sales for export along existing lines, and this will postpone transfer of the program to a cash subsidy basis.

MICROFILM EDITION OF THE NORTHWESTERN MILLER NOW AVAILABLE

FOR LIBRARIES AND COMPANIES with microfilm facilities, The Northwestern Miller is now available in microfilm form, beginning with volume 241-244, covering the complete set of issues for the year 1950 and continuing through volumes 249-250 for the year 1953. Subsequent volumes will be issued annually by University Microfilms, Ann Arbor, Mich.

One of the most pressing problems facing all types of libraries is that of providing adequate space for a constant flood of publications. Periodicals pose an especially difficult problem because of their bulk and number. For this reason, many libraries and other users of microfilm equipment are substituting microfilm editions for their paper copies after the latter have passed their period of maximum use.

The microfilm is in the form of positive microfilm, furnished on suitably labeled metal reels, each covering an entire volume. Orders should be addressed to University Microfilms, 313 N. First Street, Ann Arbor, Mich. The cost of each yearly edition is approximately $11.30.

WANT ADS

Advertisements in this department are 15¢ per word; minimum charge, $2.25. (Count six words for signature.) Add 20¢ per insertion for forwarding of replies if keyed to office of publication. Situation Wanted advertisements will be accepted for 10¢ per word, $1.50 minimum. Add 20¢ per insertion for keyed replies. Display Want Ads $7 per inch per insertion. All Want Ads cash with order.

HELP WANTED

Experienced Food Technologist—Chemist

Sales position—working with the food industries on new products and product improvements.

Excellent opportunity for an experienced food technologist, food or cereal chemist.

All replies confidential.

Mr. P. W. Bauman
MONSANTO CHEMICAL CO.
710 N. 12th Blvd. St. Louis 1, Mo.

MACHINERY FOR SALE

FOR SALE—ALL IN GOOD CONDITION—(a) One 125-foot used elevator leg, 4,000 bushels per hour; (b) Steel framing for building, 112 feet wide by 440 feet long clear span; (c) Two used Universal Moisture Testers; (d) Two used Burrows Test Weight Standard Grain Scales. Address Ad No. 2702, The Northwestern Miller, Minneapolis 1, Minn.

MILL MACHINERY

Largest stock new and rebuilt Flour and Feed Mill Machinery in Midwest, over 2,500 items. Roller Mills our specialty. Write us your needs.

ROSS MACHINE & MILL SUPPLY, INC.
12 N.E. 28th St. Oklahoma City, Okla.

MACHINERY WANTED

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

WANTED TO BUY

WE WANT TO BUY

1 double stand 10 x 36 style A N & M roller mill with collar oiling bearings and roll type feeders. Please give age, general condition and chill diameters. (9 x 36 N & M may be considered.)

1 4 x 22 or 4 x 27 free swinging sifter 19½" x 22" cloth size. Please give make, style drive, diameter throw and RPM, age and general condition including sieves. Please quote prices F.O.B. your plant.

Address Ad No. 2715
The Northwestern Miller
Minneapolis 1, Minn.

Buy and Sell Through
WANT ADS
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THE NORTHWESTERN MILLER

CONVENTION CALENDAR

May 16-17—Millers National Federation; Drake Hotel, Chicago; sec., Herman Steen, 309 W. Jackson Blvd., Chicago 6, Ill.

May 19-23 — American Association of Cereal Chemists, Sheraton-Palace Hotel, San Francisco, Cal.; sec., Clinton L. Brooke, Merck & Co., Inc., Rahway, N.J.

June 1-3 — Pennsylvania Bakers Assn., mid-year convention; Hotel Bedford Springs, Bedford, Pa.; sec., Theo. Staab, 600 N. Third St., Harrisburg, Pa.

June 13-14—Michigan State Millers Assn., Hidden Valley, Gaylord, Mich.; sec., H. S. Cowgill, Amendt Milling Co., Monroe, Mich.

June 14—Kansas Wheat Improvement Assn. Annual Wheat Field Day; Kansas State College, Manhattan, Kansas.

June 24-26—The Bakers Association of the Carolinas, the Mayview Manor, Blowing Rock, N.C.; sec., Louise Skillman, 2608 Portland Ave., Charlotte 6, N.C.

June 20-21 — Pacific Northwest Grain Dealers Assn., Davenport Hotel, Spokane, Wash.; sec., Merrill D. Sather, 418 Peyton Bldg., Spokane 1, Wash.

June 21-22—District 10, Association of Operative Millers, California State Polytechnic Institute, San Luis Obispo, Cal.; sec., Lawrence Conrad, Bemis Bro. Bag Co., San Francisco, Cal.

June 23-26—Potomac States Bakers Assn., The Cavalier, Virginia Beach, Va.; sec., Edwin C. Muhly, 1126 Mathieson Bldg., Baltimore 2, Md.

June 24 — Ontario Flour Millers Assn., King Edward Hotel, Toronto; sec., Harry J. Dowsett, 95 King St. E., Toronto, Ont.

June 27-July 2—Bakery Equipment Manufacturers Assn., Manior Richelieu, Murray Bay, P.Q., Canada; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 28—Pacific Millers Assn., Multnomah Hotel, Portland, Ore.; sec., W. C. Theda, 620 Perkins Bldg., 11th and A St., Tacoma 2, Wash.

July 28-31—West Virginia Bakers Assn., Greenbrier Hotel, Charleston; sec., Edward R. Johnson, 611 Pennsylvania Ave., Charleston.

Sept. 13-15—Bakers Club of New York, Inc., Baltimore Bakers Club, Bakers Club of Boston, Central Pennsylvania Bakers Assn., Philadelphia Bakers Club, Pittsburgh Bakers Courtesy Club, annual golf tournament for Lee Marshall Cup, Wernersville, Pa., Galen Hall Hotel and Country Club; sec., Philadelphia Bakers Club, George Landenberger, 401 N. Broad St., Philadelphia 8, Pa.

Sept. 15-17 — Southern Bakers Assn., annual production conference, Atlanta Biltmore Hotel, Atlanta, Ga.; pres., Benson Skelton, 703 Henry Grady Bldg., 26 Cain St., N.W., Atlanta, Ga.

Sept. 22-24—Wisconsin Bakers Assn., Wausau Hotel, Wausau, Wis.; exec. sec., Fred H. Laufenburg, 161 W. Wisconsin Ave., Milwaukee.

Sept. 29-30—Virginia Bakers Council, Inc., Annual Fall Conference, Williamsburg Lodge and Williamsburg Inn, Williamsburg; sec., Harold K. Wilker, 5 South 12th St., Richmond, Va.

Oct. 17-19—National Bakery Suppliers Assn., Edgewater Beach Hotel, Chicago; sec., John W. Allen, J. W. Allen Co., 110 N. Peoria St., Chicago 7, Ill.

Oct. 18-19—Baking Industry Sanitation Standards Committee, Sherman Hotel, Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

Oct. 19-23 — American Bakers Assn., Hotel Sherman, Chicago, Ill.; sec., Harold Fiedler, 20 N. Wacker Dr., Chicago 6, Ill.

Oct. 20—Bakery Equipment Manufacturers Assn., Hotel Sherman, Chicago, Ill.; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

Nov. 14-16—Self-Rising Flour Institute annual meeting, Peabody Hotel, Memphis, Tenn.; sec., Allen R. Cornelius, 322 Nashville Trust Bldg., Nashville 3, Tenn.

Dec. 1—District 5, Association of Operative Millers, Lennox Hotel, St. Louis; sec., G. Edward Mehleck, 15 N. Jefferson St., Chicago 6, Ill.

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Cereal Rusts Move To New Regions

MINNEAPOLIS—The usual northern migration of grain rusts is continuing, according to Donald G. Fletcher, executive secretary of the Rust Prevention Assn., Minneapolis. Cereal rusts overwintered freely in northern Mexico and the southern part of the Gulf States. Infections caused by wind blown leaf rust spores have now been observed in grain fields as far north as central Oklahoma.

The leaf rusts of wheat and oats are more abundant than stem rusts of these grains in the Gulf States and northeastern Mexico this year. In fact the amount of all rust in these areas is greater than it was on a comparable date last year. However, only leaf rust (crown rust) of oats is heavier than normal.

The increase in the southern U.S. of previously minor rust races or biotypes which can attack many of the oat breeding lines as well as commercial oat varieties grown throughout the U.S. and Canada is being closely watched by plant scientists, Mr. Fletcher said.

Early observations indicate the presence, in trace amounts, of biotypes of wheat steam rust which can attack Selkirk wheat. No one can predict how long it will take such rust races to increase to dangerous proportions.

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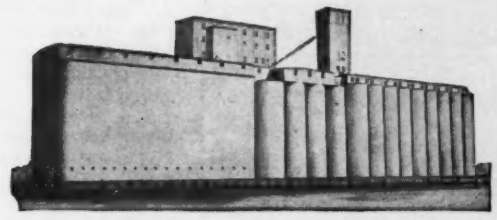

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Hundredweight or Bushel as a Trading Unit for Grain

By William A. Faught and Woodrow A. Schlegel
Marketing Research Division, Agricultural Marketing Service, USDA

EDITOR'S NOTE: Here is a report issued this week by the U.S. Department of Agriculture on an extensive study conducted by the Agricultural Marketing Service over the past several months. The report summarizes representative views of all people concerned with the proposed change to hundredweight grain trading, including representatives of farm organizations, the grain trade, processors and government agencies. The disadvantages and advantages of such a change, cited by the various people interviewed, are summarized in the report. According to the agricultural economists who conducted the study, it shows that although it is generally agreed that substantial and permanent benefits would accrue to farmers and the grain industry through a shift from the bushel to the hundredweight in measuring grains, there would be a number of problems and extra work during the change-over period. They conclude, too, that the advantages would be lasting, while the disadvantages would disappear after a period of adjustment.

For years, the grain trade has considered changing the trading unit from a bushel to a hundredweight.

Several trade groups and a few state and federal agencies have studied segments of the problem.

Two of the national farm organizations have adopted resolutions favoring the shift. And in February, 1956, two advisory committees of the U.S. Department of Agriculture recommended a study. The Grain Research and Marketing Advisory Committee recommended "that a study be initiated at an early date to evaluate the merits of the problems involved in shifting trade in grain from bushels to 100-lb. units. The analysis should include a study of the legal obstacles, institutional changes, and statistical data adjustments required in event such a change were initiated." The Feed and Forage Research and Marketing Advisory Committee made a nearly identical recommendation.

Rice, grain sorghums, dry beans, dry peas and many seed crops are now traded on a hundredweight basis, and in several western states all grains are traded in hundredweights.

This report summarizes the information received from the grain trade and from government agencies which might be affected by the proposed change. The major emphasis was placed on the determination of the nature of the problems and the extent of the changes confronting each group concerned, and not upon the number of individuals involved. A representative portion of each segment of the grain trade was contacted.

Information was obtained through interviews with representatives of farm organizations and grain trade associations, and from country and terminal elevator operators, banking institutions, insurance brokers and members and officers of futures exchanges.

Information was supplied concerning the probable changes and problems by 3 farm organizations, 3 grain exchanges, 5 financial institutions, approximately 400 elevator operators, 300 feed and flour mills, 100 brokers and jobbers, 100 commission men, 50 grain processors, 40 state departments of agriculture, and all affected agencies of the U.S. Department of Agriculture. These responses were obtained from a combination of personal interviews, replies to letter inquiries, and trade association surveys.

Government agencies provided information through group discussions and informal questionnaires on the nature of the problems and changes that would confront them as a result of the shift. Several of the grain trade associations polled their members for information on the effect of the proposed shift.

Attitudes of Farm Organizations

Views were obtained from representatives of the National Grange, the American Farm Bureau Federation, the National Farmers Union, and state and regional farmers' cooperative associations.

The National Grange, at its annual session in November, 1956, adopted this resolution: "As the standard of measurement in both purchases and sales, we favor the use of the hundredweight or ton measurement, instead of the bushel, for all grains, feeds, and seeds, and instead of the bale of hay." This reaffirmed a 1955 policy statement.

The American Farm Bureau Federation, at its national convention in December, 1955, adopted a resolution that "We favor adoption of the 'hundredweight' as a uniform standard of measurement for grain." This resolution was reaffirmed at the December, 1956, annual meeting.

The secretary of the National Council of Farmer Cooperatives expressed his organization's attitude in a letter in September, 1955, as follows: "At this time the National Council of Farmer Cooperatives joins in a recommendation for such a study in the near future in order that its members interested in the grain and feed trade may have before them the information necessary to give adequate consideration to the question."

The National Farmers Union favors the change.

The proposed shift would be expected to lessen the possibility of errors through elimination of the many conversions needed at present. It also would facilitate comparisons between the feeding values and the prices of various grains. For example, farmers must now compare the feeding value of oats at, say, 70¢ bu., with corn at $1.30 bu.; while on a hundredweight basis, the comparison would be $2.19 for oats with $2.30 for corn.

Representatives of the farm groups felt that no great length of time would be required by farmers to prepare for the shift, but most of them indicated that "winter" would be the preferred time. Many lease arrangements specify bushels and, if the shift were instituted in winter, new

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leases could incorporate the new trading unit.

According to those interviewed, the only major disadvantage that would be expected to relate directly to farmers would be the changes in patterns of thought that would be necessary. Farmers' experiences generally are based on the bushel unit, and the change would necessitate their adjustment to an unfamiliar basis of reckoning.

Views of Elevator Operators

Farmers generally deliver grain to the country elevators in truck lots, and the gross weight of the grain is determined immediately upon receipt. Dockage is determined and subtracted to give the net weight of the load. These figures in pounds are entered in the records of the firm, on the scale ticket, and, if the grain is to be stored, on the receipt to be submitted to the farmer. Then the net weight and, frequently, gross weight and dockage figures in pounds must be converted to bushel equivalents and the bushel figures entered in the records of the firm, and also on the scale ticket and warehouse receipt.

If the local elevator cleans grain or performs other services, conversions again are necessary. When an elevator operator makes a local sale of grain, he must first convert the order from bushels to pounds in order to know how much grain he must weigh out in pounds. When the grain is shipped to terminal markets, the local operator fills out a bill of lading in pounds and, if part of a "line operation" (that is, a deal by a local elevator that is part of a chain) a shipping report to submit to the home office. The scale ticket generally given to the shipper is recorded in both pounds and bushels; a warehouse receipt issued to the shipper is in bushels, and a warehouseman's supplemental certificate for loan grain is in bushels. When grain reaches the terminal market, many of the same conversions again are necessary.

If the trading unit were shifted, elevator operators would need to prepare new tariff sheets showing charges. In some states—such as Minnesota, the Dakotas and Montana—legislation might need amending to permit changing the tariff sheets. It was suggested by some of those interviewed that in such instances it might be possible simply to convert existing charges per bushel into hundredweight equivalents, and that no change in legislation would be necessary. However, this point has not been definitely established in any state, and it might be interpreted differently in different states.

All scale tickets, warehouse receipts, warehouseman's supplemental certificates, and other forms and instructions would need a change in format. Also, all inventory records, historical series of data and outstanding receipts maintained would need conversion for the elevator or parent office or firm.

Revisions of state legislation probably would be required in order to permit the necessary changes in the warehouse receipts in some states where the form in which these receipts are to be made up and the information to be reported thereon are specified by law.

Greatest Problem

Elevator operators said that establishing new rates in line with the present charges for services performed would pose the greatest problem for them in making the shift. The service charges per bushel are now about the same for all grains. However, if a hundredweight were established as a basic unit and warehousemen were to get the same returns from an elevator regardless of the type of grain stored, rates per hundredweight would have to vary among grains. Producers were expected to resist what may appear to be higher charges on some grains. In some states, establishment of a new schedule of charges probably would require changes in legislation, and in other states approval of new tariff sheets by the regulatory agencies would be needed. The problem of amending legislation in those states where revision would be necessary is complicated by the fact that in many states the legislature meets only every two years.

Minor changes would be necessary in tickets, receipts and other forms now in use, although these changes could be kept to a minimum by substituting hundredweight for bushel, wherever possible, on the blanks.

Conversion of all statistical series would present no major problem, although some retraining of clerical personnel would be necessary until they became accustomed to the new procedures.

People active in the grain trade have established over the years a series of relationships of prices, production, volume handled, and other factors which have all been in terms of bushels. A change in the trading unit would necessitate establishing new relationships and incorporating these relationships as a part of everyday thinking.

Another disadvantage mentioned by elevator men would be the cost in time and money for making preparations for the shift. However, the cost for retraining clerical help would not be large, and additional expenses could be held to a minimum by continuing to use, to the fullest extent possible, all forms and notices now in use.

One advantage would be the elimination of numerous conversion calculations, from pounds to bushels and from bushels to pounds, which are involved as the grain moves forward from the farm to the final market.

A second advantage would be simplification of calculations, by having all grains on a uniform trading basis. The new system might facilitate shifting the office procedure from manual to machine operations and also reduce the possibility of error.

Effects Expected By Other Grain Handlers

Other grain handlers include commission men, brokers and jobbers who buy or sell on the spot-cash or futures markets. The extent to which the operations of these agencies would be affected by the proposed change would depend upon the dominant activities of the agency involved.

Immediately, conversion of statistical series gradually would be necessary covering a period of at least a year, and eventually a complete recalculation of records from bushels to hundredweight might be necessary.

All commissions and handling charges would have to be converted from a bushel to a hundredweight basis. This might produce a problem

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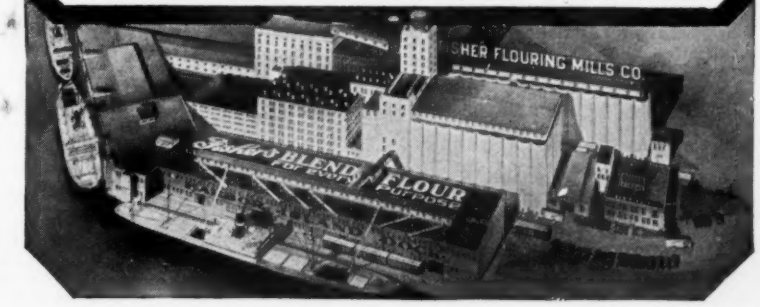
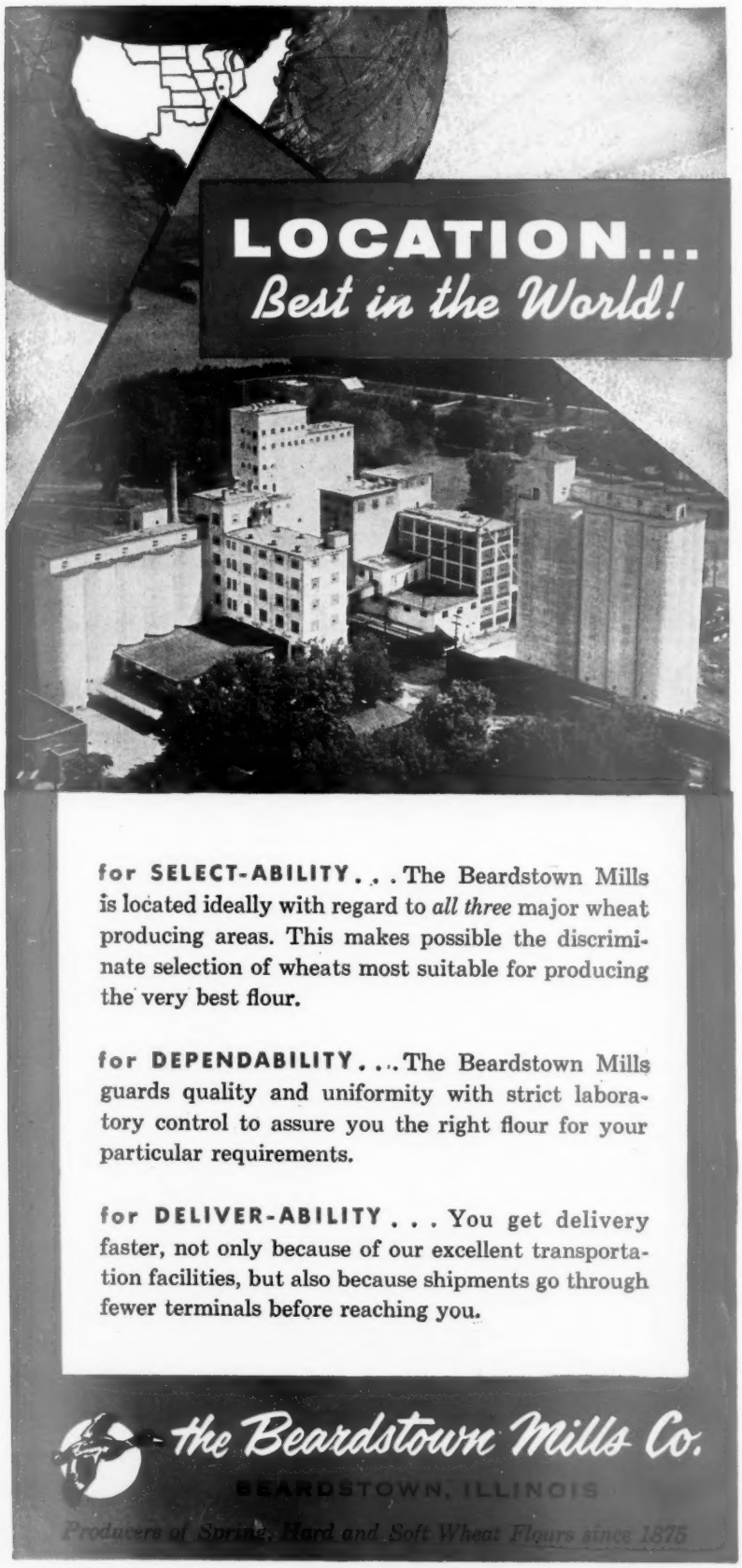


in relations between the merchandising agency and the grain shipper, according to some grain handlers, because the rates per bushel charged currently are approximately the same for all grain, whereas, if the shift were instituted and comparable returns for handling different grains were to be maintained, rates per hundredweight would vary considerably among grains.

Since merchandising agencies have been trading in bushels for many years, it is possible they would find it difficult to make the transition to hundredweight. Efficient merchandising operation depends to a great degree upon experience and knowledge developed over a long period in the grain trade, the grain handlers explained. Such experience and knowledge have long been based on the bushel as the unit of trading, and substitution of a new unit might reduce efficiency and create a handicap for this segment of the trade.

A second disadvantage mentioned would be the cost involved in preparing for the shift. The total cost, including the cost of recalculating records, introducing new procedures in the office, and retraining clerical help, would depend upon the size and volume of business of the individual or firm, but generally would be moderate.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The major advantage mentioned for merchandising agencies would be the establishment of a uniform basis for trading. This uniformity of trading would lessen the time required for training new clerical help, reduce the number of computations on invoices and settlement records, and possibly reduce the number of errors which arise through the many conversions necessary now.

Reaction of Grain Processors

Processors include distillers, flour millers, feed millers and soybean and corn processors. Although most of the products of these industries are distributed in units of pounds, hundredweights, or tons, the raw products are often bought by the bushel. If the trading unit of grain were changed from bushel to hundredweight, these industries would be concerned. The one problem in preparing for the shift would be the complete conversion of historical data used for comparison of past and current prices and volumes, according to the processors interviewed.

A second problem would be the required mental adjustment to the hundredweight basis after so many years of using the bushel unit for trading. The transition might result in some temporary confusion and errors.

One apparent disadvantage would be the cost of preparing for the shift. It was generally indicated that this cost would be small.

The major advantage would be simplification in buying the raw product. As all grains would be traded in one unit of weight, the shift would facilitate grasping the complexities of the grain trade and also speed the training of new people in the many procedures of buying grain and selling the finished products. Also, with the values of the various feed grains on a common weight basis, comparisons of values would be much easier. Today, for example, most people are not in a position to interpret quickly how 72¢ bu. for oats compares with $1.38 bu. for corn. Direct comparison would be possible if both values were expressed on a hundredweight basis.

According to those interviewed, they expected that the proposed shift would eliminate the need for conversions now made in daily buying and selling, and this elimination would lessen the possibility of errors. A substantial saving in time and money spent on clerical work therefore would be expected after the shift. Simplification would result in the work of the transportation department, where rates on railroads especially are constantly changing for different areas, and a constant need exists for changing tables used in calculating transportation costs.

How Futures Markets Would Be Affected

The membership of futures markets includes grain traders and commission men and brokers who buy and sell futures contracts for their own account, or on order for a set fee or commission.

Many of the rules which affect the futures market or the method of trading would need to be changed. These changes in rules would have to be approved by the membership of the exchanges.

The wording of futures contracts, margin requirements, commissions and units of trading, and the basis for determining the prices quoted on the market would have to be adjusted to take account of the change in the trading unit. Some changes would be quite easy to make; for example, it was suggested that the forms of confirmation slips used in futures trading could easily be changed.

Since futures contracts become active 11 months in advance of their maturity dates, some contracts expressed in bushel terms would be outstanding at the time of the proposed shift. Trading in the new contractual form, therefore, could be used only in trading contracts that would become active after the effective date of the shift. Of course, trading in the bushel contracts would have to continue until the expiration of these contracts.

The major problem mentioned by futures traders would be the length of time necessary for members of futures markets to become adjusted to the new unit of trading. Traders on futures markets have developed mental concepts of probable price relationships among different markets, different contracts or different grains that are based on the bushel. These expected relationships become a part of the mental process whereby traders are able to make decisions on futures contracts quickly and effectively. Substitution of hundredweight for bushels all along the line, traders pointed out, would require all of these groups to reorient their thinking to the new unit.

A disadvantage which would result is the cost in time and money for revisions of all historical series of data, forms, instructions and publications; the retraining of all personnel in the new method of clerical work; and the physical changes necessary, such as redesigning the board on which prices are quoted.

Comments of Bankers And Insurance Brokers

The banking institutions and insurance firms contacted anticipated no problems. The contracts used by banks in making loans on grain can be filled in with any commodity at any given unit of weight or measurement. At present, all contracts are based on the actual value of the grain. If the shift were instituted, this change would not affect the loans on grain then in force.

Insurance, except for crop insurance, which is discussed in the section on government agencies, is written on the total value of the grain. This value is based on the bushel measurement, but insurance men felt it would be a small matter to change the terminology of the insurance contracts to read hundredweight instead of bushel. The word "bushel" is found at only two places in the insurance contract now generally used. No change would be anticipated in the insurance contracts in force at the time the shift went into effect. A six-month advance notice would be preferred by the insurancemen; with this advance notice, all the insurance forms now including the word "bushel" might be used up, which would minimize additional costs resulting from the shift.

Views of Machinery Manufacturers

From discussions with representatives of machinery and scale manufacturers, it appears that there would be no significant changes or problems arising from the proposed shift in the trading unit for grain.

No change would be necessary in the designing of farm machinery or elevator equipment, and only a few

changes would be needed in terminology in the manual of instructions for some types of machinery. A vear's notice would be necessary to revise manuals of instructions, manufacturers explained, because the delivery timetable of machinery is for six months in advance of anticipated use. It was expected that bushel and hundredweight information would be carried on all information pertaining to farm machinery for several years, until the affected people became accustomed to the term hundredweight.

Effects on Work Of Government Agencies

State Departments of Agriculture—In several western states and in the territories replying to the questionnaire, no changes or problems of any type were expected, since trading in those areas already is conducted on a hundredweight basis. In many other states where grain is not grown or traded extensively, only minor, or no, changes would be required. In some other states, rather extensive changes would be required in legislation, regulations and administrative procedures. In general, it was reported that the changes would result in a simplification of the work of the state departments of agriculture or other regulatory agencies.

Federal Government Agencies—Several agencies of the federal government would be affected through changes in legislation or regulations stemming from legislation, through conversions of historical records, and through changes in office procedure and forms. The seriousness of the changes would vary among the agencies.

A problem confronting the Grain Division, Commodity Stabilization Service, would be changes in legislation or regulations necessary to control and facilitate their programs and operations. References to the bushel appear in legislation relating to the establishment of commercial corn areas, determination of acreage allotments and marketing quotas and price supports. Changes in such legislation probably would be advisable.

The Commodity Exchange Authority, USDA, would need to revise the regulations pertaining to reports required from brokers, exchange members and large traders. Orders of the Commodity Exchange Commission (composed of three members of the President's cabinet) on speculative limits covering trading and positions in grain futures markets would need revision. Historical data maintained by the CEA on futures trading statistics for at least 10 years would need to be converted to the hundredweight.

It might not be absolutely necessary for those agencies to have legislative changes to insure proper operation of their programs. However, quite some time might elapse before proper legislation could be passed, if needed.

Convert Records

It would be necessary for all agencies to convert permanent historical records from the bushel unit to the new unit of trading. The Grain Division, CSS, which administers the price-support and production-adjustment programs, would need to convert immediately all historical data for a 10-year base period for corn, wheat and rice. The Agricultural Estimates Division of Agricultural Marketing Service, which gathers basic information from farmers, would have to convert all historical data on yields per acre, production, and prices for all grains immediately for a 10-year base period. Records prior to the 10-year period would need to be converted eventually by all agencies but that could be done at the convenience of the individual office. These series of data include: Stocks, supplies, production, yield per acre, domestic utilization, foreign trade, open contracts, daily volume of trading, production - adjustment programs and daily records showing volume and commitments of large traders.

Most price series for grains also would need to be converted, except for grian sorghums and rice which already are reported by the hundredweight.

All regulations, instructions and forms for the programs of the Grain Division, CSS, pertaining to price supports, acreage allotments, marketing quotas, storage, procurement, sales and the Soil Bank would have to be rewritten to substitute hundredweight for bushel. It would also be necessary to change the terminology of all forms, instructions and notices used in gathering, compiling and disseminating information by all Washington and field offices of

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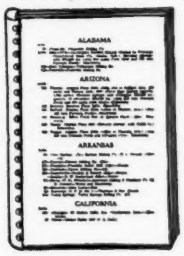
Principal feature of the service is the List of Flour Mills in the United States and Canada.



Published revisions of this list are based upon the cumulative record maintained by The Northwestern Miller and upon information derived from current general questionnaires to the industry. Mills are listed by state or provincial location and there is a general alphabetical index. Ownership is indicated and, where appropriate, the headquarters location of a milling group is given. Capacity of each U.S. mill is stated in sacks of 100 lb., of each Canadian mill in barrels of 196 lb., on the basis of 24-hour operation. Kind of power and grain storage capacity is also furnished when available.

Separate listings of flour blending plants, rye mills, dry corn mills, buckwheat mills and durum mills in the United States are appended to the list of wheat flour mills.

A List of Flour Brands in the United States and Canada is also maintained continuously. The list is compiled from information furnished by mills in response to questionnaires, from previously published lists and from current registration records furnished by the United States Patent Office.

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NEWTON, KANSAS

all agencies affected by the shift in the trading unit. However, this change might be kept to a minimum if the notice of the expected shift were issued in time to permit using up old forms.

The only major problem confronting the Federal Crop Insurance Corp. would be the change in the pattern of thought, especially at the local level, as all insuring and adjusting is done in the bushel unit.

Minor problems and changes which would occur include revision of historical series of data in all the field offices, changing the terminology in a few places in the regulations governing insurance of some grains and reworking the actuarial tables.

Work of the Warehouse Act Branch, Special Services Division, Agricultural Marketing Service, requires maintenance of records on the capacity of grain elevators. For this one purpose it is necessary to measure space or volume, rather than weight. To illustrate, the space which will hold 100,000 bushels of grain translates into 3,000 tons of wheat but only 1,600 tons of oats. The bushel now serves as a common denominator of elevator space; the use of any other measure of capacity such as cubic feet would necessitate considerable clerical work to revise existing data, but no major problem would be expected.

Inspection Fees

The existing scale of inspection fees would have to be converted to a hundredweight equivalent or a new schedule of fees would have to be developed by the Grain Division, AMS, applicable to the hundredweight unit. Probably only minor changes would be necessary in the grading and testing of grains by AMS under the Grain Standards Act. No change in the law would be required. Minor changes in the regulation to effect a shift in fees to the hundredweight unit might be desirable. No change in methods or equipment for grading grain would be required.

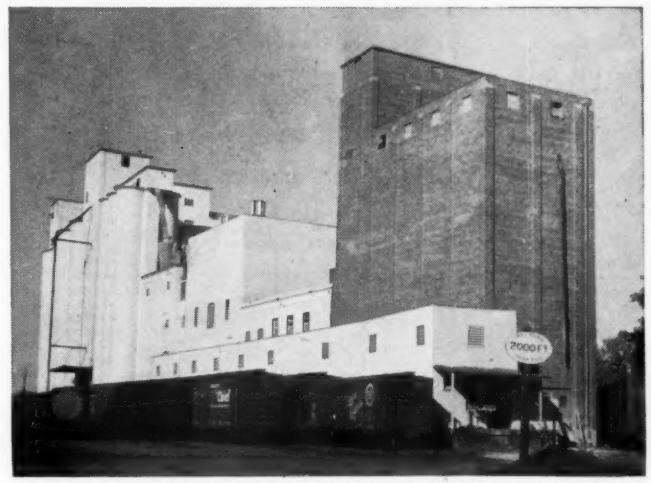
The Bureau of Customs would require no extensive changes in office procedure, forms and instructions or historical records, it was reported. No changes in legislation, presidential proclamations, or international agreements would be necessary. Problems associated with the change would be minor. No appreciable advantage or disadvantage would result from the shift as far as work of the Bureau of Customs is concerned.

A problem for a time would be confusion caused by the shift to the hundredweight unit. This would be most apparent in the field offices of the Bureau of the Census, Commodity Exchange Authority, Federal Crop Insurance Corporation, Grain Division of CSS, Grain Division of AMS, and Agricultural Estimates Division of AMS. Reluctance in accepting the new unit might be met, and it might require some time and an educational program to acquaint farmers and other segments of the grain trade with all the changes necessitated by the shift to the hundredweight. However, after the public became acquainted with the new unit of trading, considerable time could be saved in all calculations because of the uniform unit for all grains.

All of the agencies involved in gathering, compiling, handling and reporting grain data in the federal, state and county offices would be affected by the change in the trading unit.

However, no major difficulties are anticipated in making changes required by the shift.

To-Day's
MODERN BULK FLOUR MILL



WESTERN STAR'S BULK FLOUR PLANT

THE PROCESS OF CONVERTING THE MILLING INDUSTRY FROM SACKED TO BULK REQUIRES MODERN BULK FLOUR STORAGE AND HANDLING FACILITIES TO REPLACE THE OLD SACKED STORAGE WAREHOUSES.

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GRIST FOR GRINS

The visitors to the U.S. from Europe shook their heads with wonder as they rode past the old people's home. There a long row of rocking chairs oscillated briskly under the urging of their ancient occupants.

"Look!" said one of the party. "These Americans keep up their mad pace to the very end."

◆ ◆ ◆

It was the occasion of a testimonial dinner for the town's leading citizen. He told his story in a quiet, shaking voice. "Friends and neighbors," he said, "when I first came here 47 years ago, I came in no limousine. I walked into your town down a muddy dirt road. I had only one suit on my back, one pair of shoes on my feet, and all my earthly possessions were wrapped in a red handkerchief over my shoulder.

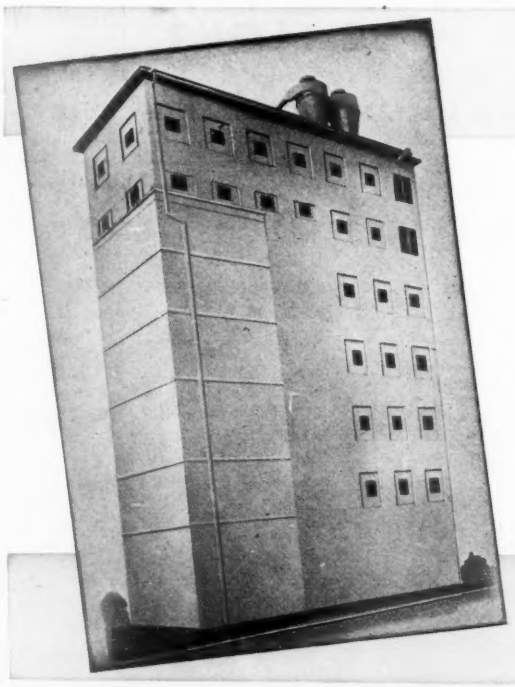
"This city has been good to me. Now, 47 years later, I am on the board of directors of your leading bank, I own apartment buildings and office buildings; I am on the board of your leading clubs; I own three concerns with branches in 39 cities. Yes, your town has been good to me and I have walked a long way since I first walked down your muddy dirt road 47 years ago."

After the banquet, an awed youngster approached the great man and asked timidly: "Tell me, sir, what did you have in the red handkerchief over your shoulder when you walked into town 47 years ago?"

"Let me think, son. If I recall rightly, I was carrying about $300,000 in cash and $750,000 in negotiable securities."

◆ ◆ ◆

A young mother finally tucked her small son into bed after an unusually trying day. That's when she sighed, "Well, I've certainly worked from son-up to son-down."

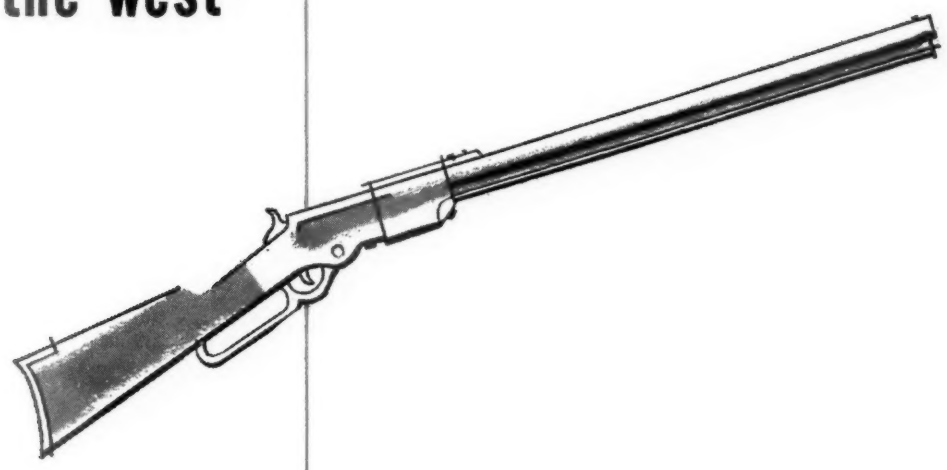


TODAY'S MODERN BULK FLOUR MILL

WEBER'S BULK FLOUR PLANT, pictured at the left, is an integral part of today's modern flour mill. The process of converting the milling industry from sacks to bulk requires modern bulk flour storage and handling facilities to replace the old sacked storage warehouse.

THE WEBER FLOUR MILLS CO.
SALINA, KANSAS

like "the gun that won the west"*



For years men staked their lives on the Winchester carbine because it was rugged, dependable and adaptable to their needs.

Today, millers stake part of their *business* lives on the flour treatment equipment and processes they use.

Recognizing that trust, N-A's Flour Service Division offers a complete, single-responsibility service for maturing, enriching and color improvement—all handled by an integrated organization with over a third-of-a-century of experience, using time-tested materials designed for the job, backed by research laboratories to work with you and your consultants and a field staff to provide regular preventive inspections as well as to be on call for any emergency.

*Winchester: The Gun That Won The West—by Harold F. Williamson.

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for flour maturing
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for a whiter, brighter flour
N-RICHMENT-A
for uniform enrichment

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N-79

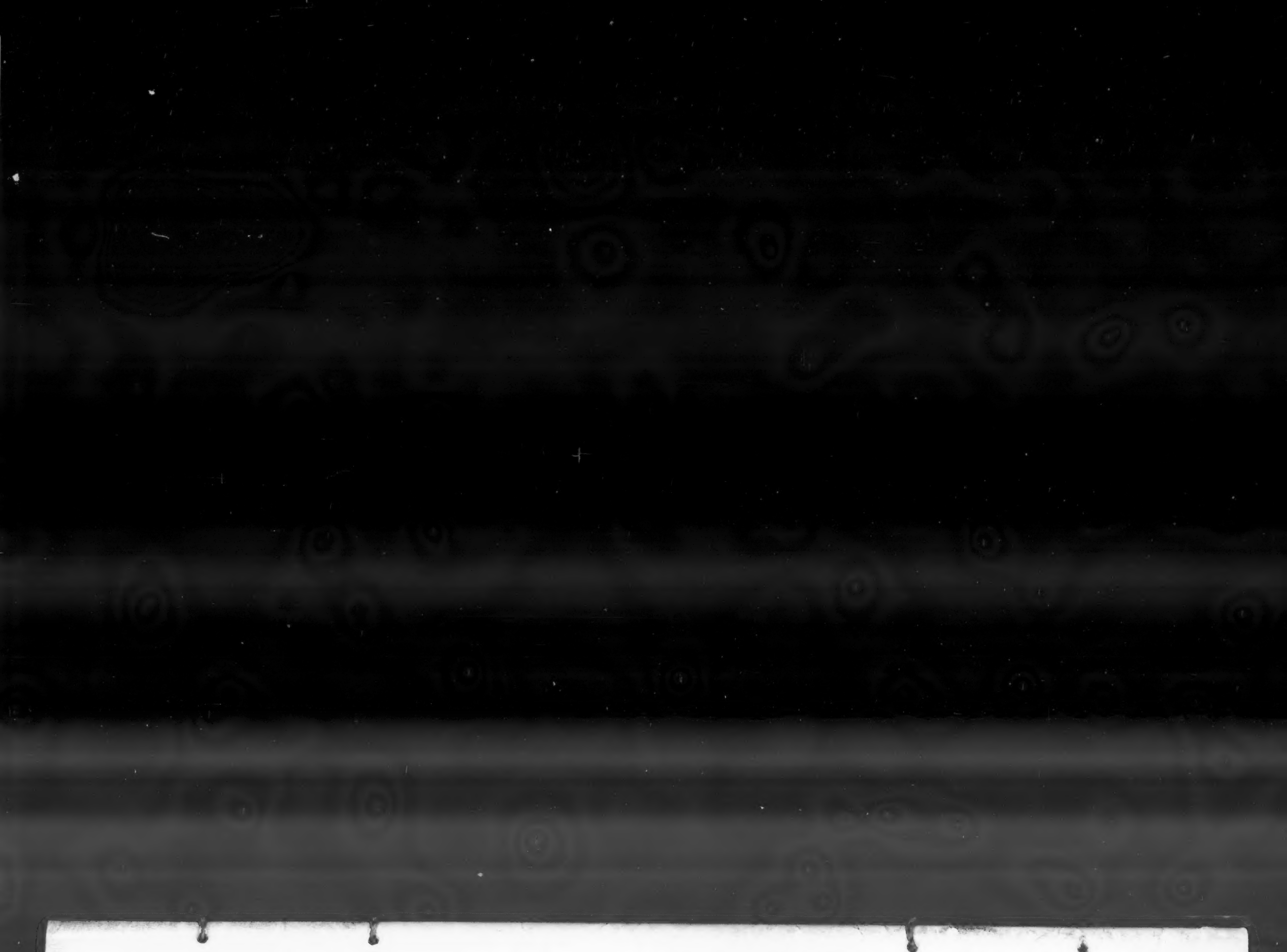
"I did it myself!"

Remember *your* first slice of bread? Or the first great day when you were so grown up that you could fix your own sandwich?

Chances are 1,000,000 to 1 you *can't* remember. Bread becomes one of life's most exciting experiences early in childhood. And no other food stays so constantly important throughout the individual's entire lifetime!

Bread and civilization began together. Bread is still one of the most powerful *ideas* in the lifetime experience of the average person.

General Mills believes that bread will keep its place in the minds and hearts of all people as long as millers and bakers continue to carry on the age-old tradition of unceasing change for the better. To that end, General Mills spends thousands of man-hours and dollars every year in research aimed toward making tomorrow's bread even better than today's.

Good eating will always begin with Bread

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